Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27,08,96 : ISO 4113

Combination No. : 0 402 646 742

Injection pump

Pump designation: PE6P12OA32OLS7837-2

EP type number : 0 412 626 943

Governor

Governer design. : RQ300/1100PA1272 Governer no.

: 0 421 801 804

Cust. part No. : 0270743002

Customer-spec. information : MB-NFZ Customer : OM441 LA Motor Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

: 1 417 413 047 Overflow valve

1.5 Inlet press. bar : : +-0.1 Tolerance bar

Overflow quantity

: 120 min. L/h Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm 5.25 Tolerance mm : **←** 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 20.50 : +- 0.50 Tolerance mm

: 6-3-5-2-4-Firing order

Phasing : 0-60-120-180-240

: -300

: + - 0.30Tolerance

Check

: + 0.50tolerance °NW

Start of delivery mark

: + 0.10Tolerance

Check

tolerance °NW : +- 0.75

Barrel no.

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 12.60

	+ Rated speed rpm : 431
Rack travel in mm : 12.60	+ guide sleeve
Tolerance mm : +- 0.05	+ travel mm : 4.71
Tolerance mm : +- 0.05	+ Tolerance mm : +- 0.10
	1 000 41 100 11111
Del. quantity	Rated speed rpm : 570
cm3/1000 strokes : 193.5	+ guide sleeve
CIII37 (000 SCLOKE2 . 133.3	travel mm : 6.00
Tolonopoo	
Tolerance	† Tolerance mm : +- 0.10
cm3/1000 strokes : $+-$ 1.0	4750
	+ Rated speed rpm : 1350
Check tolerance	+ guide sleeve
cm3/1000s. : +- 4.0	+ travel mm : 11.50
	+ Tolerance mm : +- 0.50
Spreed	†
Tolerance	
cm3/1000 strokes : 6.0	→ GUIDE SLEEVE POSITION
	+
Check tolerance	+ Rated speed rpm : 650
cm3/1000s. : 9.0	+
	+ Rack travel in mm : 20.00
Rated speed rpm : 300	+ Tolerance mm : +- 0.80
	
Rack travel in mm : 5.60	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : + 0.10	1
Del. quantity	Rated speed rpm : 600
cm3/1000 strokes : 19.0	+ Aneroid pressure
Tolerance	+ hPa : 600
cm3/1000 strokes : +- 3.0	Del. quantity
Check tolerance	cm3/1000 strokes : 193.5
cm3/1000s. : +- 6.0	Tolerance
	- cm3/1000 strokes : +- 1.0
Spreed	+ Check tolerance
Tolerance	
cm3/1000 strokes : 6.0	+ cm3/1000s. : +- 4.0
Check tolerance	+ Spreed
cm3/1000s. : 10.0	+ Tolerance
	+ cm3/1000 strokes : 6.0
	+ Check tolerance
(B) SETTING OF INJECTION PUMP	+ cm3/1000s. : 9.0
WITH GOVERNOR	†
	†
GUIDE SLEEVE TRAVEL	+ CONTROL LEVER
	†
Rated speed rpm : 300	+ control lever
guide sleeve	+ position degree : 94.0
travel mm : 1.94	+ tolerance degree : +- 4.0
Tolerance mm : +- 0.20	+
	RATED SPEED
Rated speed rpm : 1153	+
guide sleeve	rack travel mm : 12.70
travel mm : 6.37	Rated speed rpm : 1140
Tolerance mm : +- 0.15	+ Tolerance 1/min : + 8
	+
Rated speed rpm : 1100	rack travel mm : 4.00
guide sleeve	Rated speed rpm : 1250
travel mm : 6.00	Tolerance 1/min : +- 15
Tolerance mm : +- 0.10	1000101100 17111111
TO COT QUICE HAN U. TU	rack travel mm : 0.75
	T TOCK CLOVEL MAN . U.13

Tolerance mm Rated speed rpm		İ
Rated Speed Phil	. 1330	START CUT-OUT
LOW IDLE		Rated speed rpm : < 220
		Check
control lever position degree	· 72 በ	speed 1/min : > 80 Check
tolerance degree		speed 1/min : < 240
Testing:		FUEL DEL THERM CHARACTER LOTTER
Rated speed rpm	: 300	FUEL DELIVERY CHARACTERISTICS
rack travel mm		Aneroid pressure
Tolerance mm		hPa : 1500
		+ Rated speed rpm : 1100
rack travel mm		+ Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 219.0
Tolerance 1/min	: +- 20	+ Tolerance + cm3/1000 strokes : +- 1.5
Rated speed rpm	: 200	Check tolerance
Nated Speed (pill	. 200	- cm3/1000s. : +- 4.5
CRT mm min.	; > 9.00	Spreed
		+ Tolerance
TORQUE CONTROL		+ Check tolerance
Date I was all was	400	+ cm3/1000s. : 12.0
Rated speed rpm rack travel mm		Aneroid pressure
Tolerance mm		+ hPa : 1500
TOCCI GITCC IIII	0.03	Rated speed rpm : 700
Rated speed rpm	: 1100	Del. quantity
rack travel mm		+ cm3/1000 strokes : 214.0
Tolerance mm	: ← 0.10	Tolerance
		+ cm3/1000 strokes : $+$ 3.0
Rated speed rpm		+ Check tolerance
rack travel mm	: 13.70 : +- 0.10	+ cm3/1000s. : +- 6.0
Tolerance mm	: +- 0.10	Aneroid pressure
		hPa : 350
ANEROID/ALTITUDE		Rated speed rpm : 400
COMPENSATOR TEST		Del. quantity
		+ cm3/1000 strokes : 160.0
		+ Tolerance
		+ cm3/1000 strokes : + 1.0
MEASUREMENT		+ Check tolerance + cm3/1000s. : +- 4.0
Pressure hPa	: 350	I (IIID/10003
rack travel mm	: -0.80	Aneroid pressure
Tolerance mm	: ← 0.15	+ hPa : -
		Rated speed rpm : 500
Pressure hPa	: 200	Del. quantity
rack travel mm	: -2.00	+ cm3/1000 strokes : 151.0
Tolerance mm	: +- 0.20	+ Tolerance
Danaguna hD-	: 975	+ cm3/1000 strokes : + 1.0 + Check tolerance
Pressure hPa rack travel mm	: 975	+ cm3/1000s. : +- 4.0
Tolerance mm	: +- 0.05	+
		•

BREAKAWAY

Rack travel in mm : 12.70
Rated speed rpm : 1140
Tolerance 1/min : +- 8

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 205.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000s. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000 strokes : 6.0

End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 26,08,96 Edition : ISO 4113 Test oil

Combination No. : 0 402 746 6090

Injection pump

Pump designation : PES6P130A720RS7411 EP type number : 0 412 736 808

Governor

Governer design. : RQ275/950PA1274 Governer no. : 0 421 801 807

Cust. part No. : 221 575

Customer-spec. information Customer : RABA

: siehe Bemerkung Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 : +- 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.50 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 : +- 0.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240 : -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.10 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 263.0

Tolerance cm3/1000 strokes : +- 1.0	+ Tolerance mm : +- 0.10 + Rated speed rpm : 1200
Check tolerance	+ guide sleeve
cm3/1000s. : +- 4.0	+ travel mm : 11.50 + Tolerance mm : + 0.50
Spreed	+ October Milli
Tolerance cm3/1000 strokes : 5.0	GUIDE SLEEVE POSITION
	+
Check tolerance cm3/1000s. : 9.0	Rated speed rpm : 1059 Rack travel in mm : 10.90
Rated speed rpm : 275	Tolerance mm : +- 1.30
Rack travel in mm : 4.20	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm : +- 0.10 Del. quantity	+ Rated speed rpm : 600
cm3/1000 strokes : 24.0	Aneroid pressure
Tolerance	+ hPa : 1500
cm3/1000 strokes : +- 3.0 Check tolerance	+ Del. quantity + cm3/1000 strokes : 263.0
cm3/1000s. : +- 6.0	Tolerance
Spreed Tolerance	+ cm3/1000 strokes : +- 1.0 + Check tolerance
cm3/1000 strokes : 8.0	- cm3/1000s. : +- 4.0
Check tolerance cm3/1000s. : 12.0	+ Spreed - Tolerance
	- cm3/1000 strokes : 5.0
(B) A	+ Check tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000s. : 9.0
	cm3/1000s. : 9.0 CONTROL LEVER
GUIDE SLEEVE TRAVEL Rated speed rpm : 275	CONTROL LEVER control lever
GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve	CONTROL LEVER control lever position degree : 34.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 275	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever
WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0
WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0
WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0
GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.10
WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950 guide sleeve	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0 RATED SPEED
WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950 guide sleeve	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.10 Rated speed rpm : 1095 Tolerance 1/min : +- 5
GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950 guide sleeve travel mm : 6.00 Tolerance mm : + 0.10	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.10 Rated speed rpm : 1095 Tolerance 1/min : +- 5
GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950 guide sleeve travel mm : 6.00 Tolerance mm : + 0.10 Rated speed rpm : 361 guide sleeve	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.10 Rated speed rpm : 1095 Tolerance 1/min : +- 5
GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950 guide sleeve travel mm : 6.00 Tolerance mm : + 0.10 Rated speed rpm : 361 guide sleeve travel mm : 4.45	CONTROL LEVER control lever position degree : 4.0 control lever position degree : 96.0 tolerance degree : + 4.0 RATED SPEED rack travel mm : 12.10 Rated speed rpm : 1095 Tolerance 1/min : + 5 rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : + 15
WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950 guide sleeve travel mm : 6.00 Tolerance mm : + 0.10 Rated speed rpm : 361 guide sleeve travel mm : 4.45 Tolerance mm : + 0.10	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.10 Rated speed rpm : 1095 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : +- 15 rack travel mm : 0.50 Tolerance mm : +- 0.50
GUIDE SLEEVE TRAVEL Rated speed rpm : 275 guide sleeve travel mm : 2.06 Tolerance mm : + 0.20 Rated speed rpm : 1007 guide sleeve travel mm : 6.56 Tolerance mm : + 0.15 Rated speed rpm : 950 guide sleeve travel mm : 6.00 Tolerance mm : + 0.10 Rated speed rpm : 361 guide sleeve travel mm : 4.45	CONTROL LEVER control lever position degree : 34.0 tolerance degree : +- 4.0 control lever position degree : 96.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.10 Rated speed rpm : 1095 Tolerance 1/min : +- 5 rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : +- 15 rack travel mm : 0.50

		+ rack travel mm : 9.85
		+ Tolerance mm : +- 0.15
OM IDTE		Brancours hDs . (00
		+ Pressure hPa : 600 + rack travel mm : 12.05
ntrol lever		rack travel mm : 12.05 Tolerance mm : +- 0.05
ition degree	• 73.0	I rocerance iiiii : += 0.05
erance degree		I
arice degree	. , 4.0	I
rol lever		
tion degree	: 12.0	FUEL DELIVERY CHARACTERISTICS
ance degree	: +- 4.0	+
		+ Aneroid pressure
ing:		+ hPa : 1500
		Rated speed rpm : 1050
speed rpm	: 275	+ Del. quantity
travel mm		cm3/1000 strokes : 252.0
ance mm	: +- 0.10	† Tolerance
	. 2.00	+ cm3/1000 strokes : +- 3.0
travel mm		Check tolerance
speed rpm		+ cm3/1000s. : + 6.0
ance 1/min	: +- 20	A
anacd man	. 175	+ Aneroid pressure
speed rpm	; 1/5	+ hPa : - + Rated speed rpm : 500
m min.	: > 6.80	
i miri.	. > 0.00	+ Del. quantity + cm3/1000 strokes : 147.0
		Tolerance
CONTROL		+ cm3/1000 strokes : + 2.0
CONTROL		+ Check tolerance
speed rpm	: 600	+ cm3/1000s. : +- 4.0
ravel mm		+ 4.0
ce mm	: + 0.05	1
		BREAKAWAY
speed rpm	: 1050	+
ravel mm		+
nce mm		+ Rack travel in mm : 12.10
		Rated speed rpm : 1095
		Tolerance 1/min : +- 5
D/ALTITUDE		+
SATOR TEST		†
		CTARTING FUEL ASS THERY
VG		+ STARTING FUEL DELIVERY
<i>5</i>		Rated speed rpm : 100
speed rpm	: 500	+ Rated speed rpm : 100 + rack travel mm : 20.50
speed rpm re hPa	: 1500	Del. quantity
re nra ravel mm	: 13.10	- cm3/1000 strokes : 110.0
nce mm	: +- 0.05	+ Tolerance
HICC HAIF	0.00	cm3/1000 strokes : + 20.0
EMENT		Check tolerance
r test t f		- cm3/1000s. : +- 24.0
e hPa	: -	-
speed rpm	500	1
ravelmm	: 8.20	+
ince mm	: +- 0.20	
		+ LOW IDLE
speed rpm	: 500	+
		Rated speed rpm : 275
e hPa	: 380	+

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Del. quantity		
cm3/1000 strokes	:	24.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

End of test specification sheet

Note remarks

Test sheet : KHD Edition : 31.3.95

Replaces

Test oil : ISO-4113

Combination no. : 0 400 876 242

Injection pump

Pump designation : PES6A95D41ORS2471 EP type number : 0 410 896 952

Governor

Governor design. : RS325/1325A0C691L

Customer-spec. information Customer : KHD

: BF6L 913 C Engine

1st version kW : 141.0 Rated speed >: 2500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C> : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly>

Opening

pressure, bar> : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall>thickness

x Length mm> : 6.00x2.00x600

(A) Injection pump setting values

- > Insp. values in parentheses
- > Set equal delivery quant.
- > per values _

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

: 1.90...2.00 Prestroke mm : (1.85...2.05)

Rack travel in mm : 9.00...12.00 Firing order : 1-5- 3- 6- 2- 4 Firing order

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ} > : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1250

Rack travel in mm : 11.70...11.80

Del.quantity cm3/: 9.6...9.8

> 100 s: (9.4...10.0)

cm3 : 0.3Spread

> 100 s: (0.6) >

2nd speed rpm : 325 Rack travel in mm : 7.6...7.8 Del.quantity cm3/: 0.9...1.5 100 s: (0.6...1.7)

cm3 : 0.3Spread

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

rpm : 800 Speed

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 900

: 106.0...107.0 Del.quantity 1000 : (104.0...109.0) >

: 3.50 Spread cm3

1000 : (6.00)

RATED SPEED

1st version

Control lever

position> degrees: 49...57

Testing:

1st rack travel in: 10.50 Speed rpm : 940...950 2nd rack travel in: 4.00

rpm : 1040...1070 Speed

A09

4th rack travel in: 1520 rpm : 0.30...1.40 Speed

LOW IDLE 1 Control lever

position degrees: 17...25 Setting point w/out bumper spring

rpm : 325 Rack travel in mm: 8.5

Testing:

rpm : 100 Speed Minimum rack trave: 10.00

Speed rpm : 325 Rack travel in mm : 8.40...8.60

Rack travel in mm: 6.00

Speed rpm : 400...425

TORQUE CONTROL

Torque control curve - 1st version

rpm : 1250 1st speed

Rack travel in m: 11.60...11.70

2nd speed rpm : 500

Rack travel in m: 11.60...11.80

Aneroid/Altitude Compensator Test

1st version

Setting

rpm : 1250 Speed hPa : 900 Pressure

Rack travel mm : 11.60...11.70

Measurement

1/min : * Speed

1st pressure hPa : * Rack travel in m: * 2nd pressure hPa : * Rack travel in m: *

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 600 008: man

Del.quantity cm3/: 104.0...105.0
> 1000 s: (102.0...107.0)
Aneroid pressure h: 300
Speed rpm : 500

Del.quantity cm3/ : 61.0...62.0 1000 s: (59.0...64.0)

Aneroid pressure h: rpm : 650 Speed

Del.quantity cm3/: 84.0...85.0 1000 s: 82.0...87.0) **BREAKAWAY**

1st version 1mm rack travel less than

full load rack tr: 10.60

rpm : 1365...1375 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 120.0...130.0 1000 s: (110.0...140.0)

Remarks:

* Value only applies to initial setting of LDA spring. Ultimate setting of the LDA spring is performed by way of the appropriate setting given in the delivery curve.

Note remarks

Test sheet : GUA Edition : 27.8.96

Replaces :

Test oil : ISO-4113

Combination no. : 0 401 830 701

Injection pump

Pump designation : PE12P130A120LS3094

EP type number

: 0 411 830 700

Governor

Governor design. : RQV350...900PA802

Governer no. : 0 421 813 312

Customer-spec. information

formation: GUASCOR

Customer

. GOASCO

Engine

: E318

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C> : 38...42

Overflow valve

> : 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

assembly> : 0 681 443 022

Opening

pressure, bar> : 172...175

Test lines : 1 680 750 080

Outside diameter x Wall>thickness

x Length mm> : 8.00x2.00x1000

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90

> : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1-12-9-4-5-8-11-2-3-

10-7-6

Phasing : 0-45-60-105-120-165-

180-225-240-285-300-

345

Tolerance $+ - ^{\circ}> : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 900

Rack travel in mm : 9.40...9.50

Del.quantity cm3/: 25.5...25.9

> 100 s: (25.2...26.2)

Spread cm3 : 0.5

> 100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 4.0...4.2 Del.quantity cm3/: 2.1...2.7

> 100 s: (1.8...3.0) Spread cm3 : 0.8

> 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 940
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm: 900

Del.quantity : 255.0...259.0 > 1000 : (252.0...262.0)

Spread cm3 : 5.00 > 1000 : (9.00)

RATED SPEED

1st version

Control lever

position> degrees: 58...64

Testing:

1st rack travel in: 8.40 Speed rpm : 940...950 2nd rack travel in: 4.00

Speed rpm : 970...1000

4th rack travel in: 1100

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 8...14

Testing:

Speed rpm : 100 Minimum rack trave: 5.80 Speed rpm : 350 Rack travel in mm : 4.00...4.20

CONSTANT REGULATION

Speed rpm : 355...465

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 8.40 rpm : 940...950 Speed

Remarks:

Note remarks

Test sheet

: VOL

Edition

: 23.3.92

Replaces

Test oil

: ISO-4113

Combination no.

: 0 401 846 539

Injection pump

Pump designation : PE6P110A320RS483-5

Governor

Governor design. : RQV250...1200PA918-3

Customer-spec. information

Customer

: VOLVO

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C> : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

assembly>

: 0 681 343 009

Opening.

: 172...175 pressure, bar>

Test lines

: 1 680 750 015

Outside diameter

x Wall>thickness

x Length mm>

: 6.00x1.50x600

- (A) Injection pump setting values
 - > Insp. values in parentheses
 - > Set equal delivery quant.
 - > per values ___

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm

: 3.00...3.10

: (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order

: 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance $+ - ^{\circ}> : 0.50 (0.75)$

1st speed rpm : 700

Time to cyl. no. : 1

BASIC SETTING

Rack travel in mm : 12.70...12.80

Del.quantity cm3/: 13.2...13.4

>

100 s: (13.0...13.6)

Spread

cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0Rack travel in mm: 5.3...5.5

Del.quantity cm3/: 1.6...2.0 100 s: (1.3...2.3)

Spread

cm3 : 0.3

100 s: (0.6)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

rpm : 250 1st speed

: 1.10...1.30 travel mm

rpm : 380 2nd speed

: 2.30...2.60 travel mm

rpm : 500 3rd speed

: 2.90...3.30 travel mm

rpm : 1260 4th speed

: 7.70...7.90 travel mm

rpm : 1400 5th speed

travel mm : 9.00...9.30

GUIDE SLEEVE POSITION Control-lever position

Degree: -1 rpm : 1330 Speed

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000

: 132.0...134.0

Del.quantity >

1000 : (129.0...137.0)

cm3 : 4.00 Spread

1000 : (7.50)

RATED SPEED

1st version

Control lever

position> degrees: 54...62

A13

Testing:

1st rack travel in: 11.70

rpm : 1260...1270 Speed

2nd rack travel in: 4.00 rpm : CA. 1450 Speed 4th rack travel in: 1600

rpm : 0.00...1.00 Speed

LOW IDLE 1

Control lever

position degrees: 6...14

Testing:

: 100 Speed rpm Minimum rack trave: 6.80 rpm : 250 Speed

Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

rpm : 250...450 Speed

Aneroid/Altitude

Compensator Test

1st version

Setting

rpm : 500 Speed Pressure hPa : 1000

: 12.70...12.80 Rack travel mm

Measurement

 $1/\min : 500$ Speed

1st pressure hPa : -

Rack travel in m: 9.30...9.50

2nd pressure hPa : 230

Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 700 Del.quantity cm3/ : 71.0...74.0

1000 s: (68.0...77.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

rpm : 1260...1270 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 170.0...200.0 1000 s: (166.0...204.0)

Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250 Rack travel in mm : 5.30...5.50

Del.quantity cm3/: 16.0...20.0 > 1000 s: (13.0...23.0)

Spread cm3 : 3.00 1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =

2.40...2.60 mm.

Permissible alteration from 2.20...2.90

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : SCA : 14.6.94 Edition : 2.11.93 Replaces : ISO-4113 Test oil Combination no. : 0 401 846 950 Injection pump Pump designation : PE6P110A720RS3289 : 0 411 816 781 EP type number Governor Governor design. : RQV200...1100PA555-5 : D 421 813 943 Governer no. Customer-spec. information Customer : SCANIA : DS11 63A Engine TEST BENCH REQUIREMENTS Test oil inlet temp. *C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 104 assembly>

Opening

: 250...253 pressure, bar>

Orifice plate

diameter mm> : 0,7

Test lines : 1 680 750 008

Outside diameter x Wall>thickness

x Length mm> : 6.00x2.00x600

(A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values ____

BEGINNING OF DELIVERY Test pressure, bar: 25...27

: 3.30...3.40 Prestroke mm : (3.25...3.45) Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ}> : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

rpm: 700 1st speed

Rack travel in mm : 12.30...12.40

Del.quantity cm3/: 17.1...17.3

100 s: (16.9...17.5)

cm3 : 0.6Spread

100 s: (0.9)

rpm : 325.0 2nd speed Rack travel in mm: 6.5...6.7 Del.quantity cm3/: 1.9...2.5 100 s: (1.6...2.8) cm3 : 0.3Spread

100 s: (0.6)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

rpm : 250 1st speed

: 0.70...1.10 travel mm

rpm : 350 2nd speed

: 2.00...2.60 travel mm

3rd speed rpm : 650

travel mm : 4.90...5.50

rpm : 1145 4th speed

: 8.30...8.50 travel mm

5th speed rpm : 1300

: 9.70...10.10 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

rpm : 1130 Speed

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 700 Speed Aneroid pressure h: 1500

: 171.0...173.0 Del.quantity 1000 : (168.0...176.0) >

Spread cm3 : 8.00 1000 : (12.0)

RATED SPEED

1st version Control lever

position> degrees: 112...120

Testing:

1st rack travel in: 11.30

rpm : 1140...1150 Speed

2nd rack travel in: 4.00

rpm : 1280...1310 Speed

4th rack travel in: 1420

Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 65...73

Testina:

rpm : 100 Speed Minimum rack trave: 8.20 rpm : 325 Speed

Rack travel in mm : 6.50...6.70

Rack travel in mm : 2.00

rpm : 400...460 Speed

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500 Pressure hPa : 1500

Rack travel mm : 12.30...12.40

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 9.80...10.20

2nd pressure hPa : 200

Rack travel in m: 11.70...11.80 3rd pressure hPa : 140

Rack travel in m: 10.65...10.95

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500 rpm : 1100 Speed

Del.quantity cm3/: 160.0...168.0 1000 s: (158.0...170.0)

Aneroid pressure h: rpm : 500 Speed

Del.quantity cm3/: 112.0...116.0

1000 s: (110.0...118.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30

Speed

rpm : 1140...1150

STARTING FUEL DELIVERY

rpm : 100

Del.quantity cm3/: 240.0...290.0 Rack travel in mm : 20.00...21.00

LOW IDLE

rpm : 325 Speed

Rack travel in mm : 6.50...6.70

Remarks:

Delivery-valve spring pre-tension

 $3.2...3.4 \, \text{mm}$.

Permissible alteration of 3.0...3.5 mm

Start-of-delivery setting with ROBO diaphragm.

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

A16

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : KHD Edition : 3.12.93 Replaces Test oil : ISO-4113 Combination no. : 0 401 848 825 Injection pump Pump designation : PE8P12OA920/5LS32O8 EP type number : 0 411 828 721 Governor Governor design. : RQ200/1200PA1088 : 0 421 801 692 Governer no. Customer-spec. information Customer : KHD Engine : BF8L513CP : 235.0 1st version kW Rated speed >: 2400 TEST BENCH REQUIREMENTS Test oil inlet temp. *C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 019 assembly> Opening | pressure, bar> : 207...210 Orifice plate diameter mm> : 0,8 Test lines : 1 680 750 067 Outside diameter x Wall>thickness : 6.00x1.50x1000 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values ____

: 3.50...3.60 Prestroke mm : (3.45...3.65) > Rack travel in mm : 15.00...19.00 : 1-8-7-2-6-5-Firing order 4- 3 Phasing : 0-45-90-135-180-225-270-315 Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1150 Rack travel in mm : 13.20...13.30 Del.quantity cm3/: 16.6...16.8 100 s: (16.3...17.1) Spread cm3 : 0.6> 100 s: (1.0) 2nd speed rpm : 300.0 Rack travel in mm : 7.6...7.8 Del.quantity cm3/: 2.0...2.6 100 s: (1.7...2.9) cm3 : 0.9 Spread 100 s: (1.3) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 300 1st speed : 1.00...1.40 travel mm rpm : 400 2nd speed travel mm : 2.20...2.80 rpm : 550 3rd speed travel mm : 3.50...4.10 4th speed rpm : 1200 travel mm : 8.20...8.40 rpm : 1285 5th speed : 9.00...9.40 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1220 t eeq2 Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version

rpm : 1150

Speed

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Aneroid pressure h: 900

: 166.0...168.0 Del.quantity 1000 : (163.0...171.0)

>

cm3 : 6.00 1000 : (10.00) Spread >

RATED SPEED

1st version Control lever

position> degrees: 116...124

Testing:

1st rack travel in: 12.20

rpm : 1190...1200 Speed

2nd rack travel in: 4.00

Speed rpm : 1310...1340

4th rack travel in: 1450

rpm : 0.00...1.00Speed

LOW IDLE 1 Control lever

position degrees: 81...89

Testing:

rpm : 100 Speed Minimum rack trave: 9.20

rpm : 300 Speed

Rack travel in mm : 7.60...7.80

CONSTANT REGULATION

rpm : 300...510 Speed

TORQUE CONTROL

Dimension a mm : 0.40

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 13.20...13.30 and speed rpm : 700

2nd speed

Rack travel in m: 13.50...13.70

Aneroid/Altitude

Compensator Test

1st version

Setting

: 500 rpm Speed hPa : 900 Pressure

Rack travel mm : 13.40...13.60

Measurement

Speed 1/min: 500

1st pressure hPa : -

Rack travel in m: 12.80...13.00

2nd pressure hPa : 500

Rack travel in m: 13.10...13.20

START CUT-OUT

A18

Speed 1/min: 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900 rpm : 700 Speed

Del.quantity cm3/: 167.0...171.0 1000 s: (164.0...174.0)

Aneroid pressure h: rpm : 500 Speed

Del.quantity cm3/: 134.0...136.0 1000 s: (131.0...139.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.20

rpm : 1190...1200 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 170.0...190.0

Remarks:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION

Special-purpose vehicle

Rack travel in mm : 9.00...12.00 BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5-3-6-2-4 Note remarks Test sheet : SCA 11,1 s Edition : 03.12.92 Phasing : 0-60-120-180-240-300 Replaces : 22,11,91 Test oil : ISO-4113 Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Combination no. : 0 401 876 778 Time to cyl. no. : 1 Injection pump BASIC SETTING Pump designation : PE6P110A720RS3263 rpm: 700 EP type number : 0 411 816 776 1st speed Governor Rack travel in mm : 11.20...11.30 Governor design. : RSV350...1100P1A481-: 0 421 833 344 Del.quantity cm3/: 12.0...12.2 Governer no. 100 s: (11.7...12.5) Customer-spec, information Customer : SCANTA Spread cm3 : 0.5Engine : DN11 47 100 s: (0.8) TEST BENCH REQUIREMENTS rpm : 350 2nd speed Rack travel in mm: 6.7...7.1 Test oil inlet temp. °C> Del.quantity cm3/: 2.0...2.4 : 38...42 100 s: (-) > Overflow valve Spread cm3 : 0.3: 1 417 413 025 100 s: (0.6) GUIDE SLEEVE POSITION Inlet press., bar: 1.50 Control-lever position Degree: -3 Test nozzle holder assembly> : 1 688 901 104 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Openina : 250...253 FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar> 1st version Orifice plate diameter mm> : 0,7 Speed rpm : 700 : 120.0...122.0 Del.quantity > 1000 : (117.0...125.0) Test lines : 1 680 750 008 cm3 : 5.00 Spread > 1000 : (8.00) Outside diameter RATED SPEED x Wall>thickness x Length mm> : 6.00X2.00X600 1st version (A) Injection pump setting values Control Lever > Insp. values in parentheses position> degrees: 82...90 > Set equal delivery quant. > per values ___ Testing: 1st rack travel in: 10.20 rpm : 750...755 BEGINNING OF DELIVERY Speed 2nd rack travel in: 4.00 Test pressure, bar: 25...27 rpm : 784...792 Speed 4th rack travel in: 920 : 3.30...3.40 Prestroke mm

rpm : 0.30...1.40

Speed

: (3.25...3.45)

LOW IDLE 1 Control lever

position degrees: 82...90

Setting point w/out bumper spring

rpm : 790 Rack travel in mm : 4.6 rpm : 790 Speed

Rack travel in mm : 4.50...4.70

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.20 rpm : 750...755 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 220.0...270.0 > 1000 s: (216.0...274.0) Rack travel in mm : 20.00...21.00

HIGH IDLE

1st version

rpm : 790 Speed

Rack travel in mm : 4.50...4.70 Spread cm3 : 7.00 1000 s: (10.0)

Remarks:

Note remarks

Test sheet : MB

: 26,02,93 Edition Replaces : 3.2.93

: ISO-4113 Test oil

Combination no. : 0 401 876 796

Injection pump

Pump designation: PE6P120A320LS3815-13

EP type number : 0 411 826 782

Governor

: RSV675...1050P0A820-Governor design.

12

: 0 421 833 401 Governer no.

Customer-spec. information

Customer : MERCEDES-BENZ

Engine : CM441A

1st version kW : 162.0 Rated speed >: 2100

TEST BENCH REQUIREMENTS

Test oil

: 38...42 inlet temp. *C>

Overflow valve

: 1 417 413 025 >

Inlet press., bar: 1.50

Overflow

quantity min.>1/h: 100...120

Test nozzle holder

: 1 688 901 019 assembly>

Opening

: 207...210 pressure, bar>

Orifice plate

diameter mm> : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall>thickness

: 8.00x2.50x1000 x Length mm>

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

: 3.60...3.70 Prestroke mm

: (3.55...3.75) Rack travel in mm : 9.00...12.00

: 6-3-5-2-4-1 Firing order

: 0-60-120-180-240-300 Phasing

Tolerance $+ - ^{\circ}> : 0.50 (0.75)$

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1080

Rack travel in mm : 10.50...10.60

Del.quantity cm3/ : 15.9...16.1

100 s: (15.6...16.4)

cm3 : 0.5Spread

100 s: (0.9)

rpm : 675.02nd speed Rack travel in mm: 3.1...3.7 Del.quantity cm3/: 1.4...2.0

100 s: (1.1...2.3)

cm3 : 0.8 Spread 100 s: (1.2) >

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800 Speed

Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 1080 Speed

: 159.0...161.0 Del.quantity 1000 : (156.0...164.0) cm3 : 5.00

Spread

1000 : (9.00)

RATED SPEED

1st version Control lever

position> degrees: 89...97 Testing: 1st rack travel in: 9.50 rpm : 1110...1120 Speed 2nd rack travel in: 4.00 rpm : 1140...1158 Speed 4th rack travel in: 1250 Speed rpm : 0.30...1.40 LOW IDLE 1 Control lever position degrees: 73...81 Setting point w/out bumper spring Speed rpm : 675 Rack travel in mm: 3.4 Testing: rpm : 100 Speed Minimum rack trave: 19.50 Speed rpm : 675 Rack travel in mm : 3.30...3.50 SET IDLE AUXILIARY SPRING Rack travel in mm : 2.00 TORQUE CONTROL Torque control curve - 1st version rpm : 1080 1st speed Rack travel in m: 10.50...10.60 2nd speed rpm : 700 Rack travel in m: 12.50...12.70 3rd speed rpm : 975 Rack travel in m: 11.30...11.50 : 500 4th speed rpm Rack travel in m: 12.50...12.70 FUEL DELIVERY CHARACTERISTICS 1st version : 700 Speed rpm Del.quantity cm3/: 201.0...205.0 1000 s: (198.0...208.0) cm3 : 8.00 Spread 1000 s: (12.0) **EREAKAWAY** 1st version 1mm rack travel less than

Remarks: **APPLICATION**

Del.quantity cm3/: 190.0...210.0 1000 s: (186.0...214.0)

In order to adjust and test the EP combination, set full-load speed regul. at 1110...1120 1/min. Then set speed regul. to 1060...1070 1/min again.

Forage harvester

A22

Speed

>

Speed

full load rack tr: 9.50

STARTING FUEL DELIVERY

rpm

rpm

: 1110...1120

: 100

Note remarks

Test sheet Edition

: NAV : 18,10,93

Replaces Test oil

: 5.3.93 : ISO-4113

Combination no.

: 0 402 046 838

Injection pump

Pump designation : PES6P100A320LS3306

EP type number

: 0 412 006 703

Governor

Governor design. : RQV350...1200PA1042-

Governer no.

: 0 421 815 320

Customer-spec. information

Customer

: NAVISTAR

Engine

: DTA-466

1st version kW

Rated speed

: 172.0 >: 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C>

: 38...42

Overflow valve

>

: 2 417 413 076

Inlet press., bar: 2.80

Test nozzle holder

assembly>

: 1 688 901 101

Opening |

pressure, bar>

Orifice plate

diameter mm>

: 0,6

: 207...210

Test lines

: 1 680 750 015

Outside diameter

x Wall>thickness

x Length mm>

: 6.00x1.50x600

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm

: 2.95...3.05 : (2.8...3.1)

Rack travel in mm : 14.0...17.0

Firing order : 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance $+ - ^{\circ} > : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

1st speed

rpm: 800

Rack travel in mm : 13.5...13.6

Del.quantity cm3/: 14.75...14.95

100 s: (14.55,...15.15)

Spread

cm3 : 0.8

>

100 s: (1.2)

2nd speed rpm : 350.0Rack travel in mm: 6.0...6.2

Del.quantity cm3/: 1.3...1.7

100 s: (1.05...1.95)

Spread >

cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350

travel mm : 1.8...2.0

2nd speed

rpm : 500

travel mm

: 3.5...3.9

3rd speed

rpm : 800

travel mm 4th speed

: 6.2...6.6 rpm : 1250

travel mm

: 9.3...9.5

5th speed

rpm : 1400

travel mm

: 10.5...11.0

GUIDE SLEEVE POSITION Cortrol-lever position

Degree: -1

rpm : 1440

Rack travel in mm : 7.0...13.0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

Speed

rpm : 800

Del.quantity : 147.5...149.5 > 1000 : (145.5...151.5) START CUT-OUT cm3 : 8.00 Spread 1000 : (12.0) 1/min: 280 (290) > Speed RATED SPEED FUEL DELIVERY CHARACTERISTICS 1st version 1st version Control lever position> degrees: 116...124 Aneroid pressure h: 1200 rpm : 800 Speed Del.quantity cm3/: 147.5...149.5 Testing: 1st rack travel in: 13.90 1000 s: (145.5...151.5) > Speed rpm : 1270...1300 cm3 : 8.00Spread 2nd rack travel in: 4.00 1000 s: (12.0) Speed rpm : 1440...1450 Aneroid pressure h: 1200 4th rack travel in: 1550 rpm : 1200 Speed Del.quantity cm3/: 178.0...182.0 rpm : 0.00...1.00 Speed > 1000 s: (176.0...184.0) cm3 : 8.00 LOW IDLE 1 Spread 1000 s: (12.0) Control lever position degrees: 74...82 Aneroid pressure h: -Speed rpm : 900 Del.quantity cm3/ : 69.0...73.0 > 1000 s: (67.0...75.0) Testing: rpm : 275 Speed Minimum rack trave: 7.60 Speed rpm : 350 Rack travel in mm: 6.0...6.2 BREAKAWAY 1st version CONSTANT REGULATION Speed rpm : 350...520 1mm rack travel less than full load rack tr: 13.90 TORQUE CONTROL Torque control curve - 1st version Speed rpm : 1250...1280 1st speed rpm : 800 Rack travel in m: 13.5...13.6 STARTING FUEL DELIVERY 2nd speed rpm : 1200 Rack travel in m: 14.9...15.1 3rd speed rpm : 600 rpm : 100 Speed Rack travel in m: 12.6...13.0 Del.quantity cm3/: 120.0...160.0 1000 s: (115.0...165.0) Aneroid/Altitude LOW IDLE Compensator Test Speed rpm : 350 Rack travel in mm : 6.0...6.2 1st version Del.quantity cm3/: 13.0...17.0 Settina 1000 s: (11.5...19.5) rpm : 1200 > Speed hPa : 1200 cm3 : 4.00 Spread Pressure Rack travel mm : 14.6...14.8 1000 s: (6.50) Remarks: Measurement Speed 1/min: 1200 : NAVISTAR #1819913091 1st pressure hPa : -Rack travel in m: 9.4...9.8 2nd pressure hPa : 300 Rack travel in m: 10.7...10.8 3rd pressure hPa : 730

Rack travel in m: 13.2...13.6

Aneroid pressure h: 1200

Note remarks

Test sheet : NAV : 24.02.94 Edition : 11.93 Replaces

Test oil

: ISO-4113

Combination no. : 0 402 046 845

Injection pump

Pump designation : PES6P100A320LS3309

EP type number

: 0 412 006 704

Governor

: RQV350...1200PA1042-Governor design.

6K

Governer no.

: 0 421 815 330

Customer-spec, information

: DTA-408 Engine

1st version kW : 142.0 >: 2600 Rated speed >: 2600 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C> : 38...42

Overflow valve

: 2 417 413 076 >

Inlet press., bar: 2.80

Test nozzle holder

: 1 688 901 101 assembly>

Openina |

pressure, bar> : 207...210

Orifice plate

diameter mm> : 0,6

: 1 680 750 015 Test lines

Outside diameter

x Wall>thickness

x Length mm> : 6.00x1.50x600

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 16...18

: 2.95...3.05 Prestroke mm : (2.9...3.1)

Rack travel in mm : 14.0...17.0 Firing order : 1-5-3-6-2-4

: 0-60-120-180-240-300

Tolerance $+ - ^{\circ}> : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

Phasing

rpm: 900 1st speed

Rack travel in mm : 12.1...12.2

Del.quantity cm3/: 13.25...13.45

100 s: (13.15...13.65)

cm3 : 0.8Spread

> > 100 s: (1.2)

rpm : 350.02nd speed Rack travel in mm: 5.1...5.3 Del.quantity cm3/: 1.45...1.85 100 s: (1.2...2.1)

cm3 : 0.4Spread > 100 s: (0.7)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350 travel mm : 1.6...2.0

rpm : 500 2nd speed

: 3.8...4.2 travel mm

rpm : 800 3rd speed travel mm : 5.8...6.2

rpm : 1300 4th speed

: 8.9...9.1 travel mm

rpm : 1500 5th speed

: 10.4...10.8 travel mm

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900 Aneroid pressure h: 1200

: 132.5...134.5 Del.quantity 1000 : (130.5...136.5) >

: 8.00 Spread cm3

1000 : (12.0)

RATED SPEED

1st version

Control Lever

position> degrees: 112...122

Testina:

1st rack travel in: 11.40

rpm : 1390...1420 Speed

2nd rack travel in: 4.00

rpm : 1530...1540 Speed

4th rack travel in: 1650

rpm : 0.00...1.00Speed

LOW IDLE 1 Control lever

position degrees: 69...81

Testing:

: 275 Speed man

Minimum rack trave: 6.70

rpm : 350 Speed

Rack travel in mm : 5.10...5.30

CONSTANT REGULATION

Speed rpm : 350...520

TORQUE CONTROL

Torque control curve - 1st version

rpm : 900 1st speed

Rack travel in m: 12.1...12.2

rpm : 1300 2nd speed

Rack travel in m: 12.4...12.6

3rd speed rpm : 700

Rack travel in m: 11.4...11.8

Aneroid/Altitude

Compensator Test

1st version

Setting

: 1300 Speed rom hPa : 1200 Pressure

Rack travel mm : 12.4...12.6

Measurement

1/min : 1300Speed

1st pressure hPa : -

Rack travel in m: 8.4...8.8

2nd pressure hPa : 270

Rack travel in m: 9.6...9.7

3rd pressure hPa : 570

Rack travel in m: 11.2...11.6

START CUT-OUT

Speed 1/min : 280 (290) FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

rpm : 1300 Speed

Del.quantity cm3/: 139.0...143.0 > 1000 s: (137.0...145.0) Spread cm3: 8.00

1000 s: (12.0) >

Aneroid pressure h: rpm : 900 Speed

Del.quantity cm3/: 66.0...70.0

1000 s: (64.0...72.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40

rpm : 1390...1420 Speed

STARTING FUEL DELIVERY

Speed : 100 rpm

Del.quantity cm3/: 120.0...160.0

1000 s: (115.0...165.0)

LOW IDLE

>

Speed rpm : 350

Rack travel in mm: 5.1...5.3

Del.quantity cm3/: 14.5...18.5

1000 s: (12.0...21.0) >

Spread cm3 : 4.00

1000 s: (6.50)

Remarks:

: NAVISTAR #1819922C91

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 16...18 : 2.95...3.05 Note remarks Prestroke mm : (2.9...3.1) Rack travel in mm : 14.0...17.0 Test sheet : NAV : 24.02.94 Edition Firing order : 1-5-3-6-2-4 : 14.10.93 Replaces Test oil : ISO-4113 Combination no. : 0 402 046 846 Phasing : 0-60-120-180-240-300 Phasing Injection pump Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Pump designation : PES6P100A320LS3309 : 0 412 006 704 EP type number Time to cyl. no. : 1 Governor : RQV350...1200PA1042-BASIC SETTING Governor design. : 0 421 815 331 1st speed rpm: 900 Governer no. Customer-spec. information Rack travel in mm : 11.0...11.1 Customer : NAVISTAR Del.quantity cm3/: 10.0...10.2 Engine : DTA-408 > 100 s: (9.8...10.4) 1st version kW : 130.5 >: 2600 cm3 : 0.8Rated speed Spread >: 2600 Rated speed 100 s: (1.2) TEST BENCH REQUIREMENTS 2nd speed rpm : 350.0Rack travel in mm: 5.1...5.3 Test oil Del.quantity cm3/: 1.45...1.85 inlet temp. *C> : 38...42 100 s: (1.2...2.1) Overflow valve cm3 : 0.4Spread : 2 417 413 076 100 s: (0.7) (B) Setting of injection pump Inlet press., bar: 2.80 with governor Test nozzle holder assembly> : 1 688 901 101 GUIDE SLEEVE TRAVEL 1st speed rpm : 350 travel mm : 1.6...2.0 Opening | rpm : 500 pressure, bar> : 207...210 2nd speed : 3.8...4.2 travel mm Orifice plate 3rd speed : 800 rpm diameter mm> : 0,6 travel mm : 5.8...6.2 4th speed 1300 rpm travel mm : 8.9...9.1 : 1500 Test lines : 1 680 750 015 5th speed rom : 10.4...10.8 travel mm Outside diameter FULL LOAD DELIV. AT FULL LOAD STOP x Wall>thickness : 6.00x1.50x600 x Length mm> 1st version (A) Injection pump setting values Speed rpm : 900 Aneroid pressure h: 1200 > Insp. values in parentheses > Set equal delivery quant. > per values ____ Spread 1000 : (12.0) BEGINNING OF DELIVERY

RATED SPEED 1st version Control lever position> degrees: 114...126 Testina: 1st rack travel in: 10.7 rpm : 1360...1390 Speed 2nd rack travel in: 4.00 rpm : 1500...1510 Speed 4th rack travel in: 1650 rpm : 0.00...1.00 Speed LOW IDLE 1 Control lever position degrees: 69...81 Testing: Speed 775 : and Minimum rack trave: 6.20 rpm : 350 Rack travel in mm : 5.10...5.30 CONSTANT REGULATION Speed rpm : 350...520 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 900 Rack travel in m: 11.0...11.1 2nd speed rpm : 1300 Rack travel in m: 11.7...11.9 3rd speed rpm : 700 Rack travel in m: 10.3...10.7 Aneroid/Altitude Compensator Test 1st version Setting : 1300 Speed rom hPa : 1200 Pressure Rack travel mm : 11.7...11.9 Measurement 1/min: 1300 Speed 1st pressure hPa : -Rack travel in m: 8.8...9.2 2nd pressure hPa : 270 Rack travel in m: 9.8...9.9 3rd pressure hPa : 580 Rack travel in m: 11.1...11.5

FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: 1200 Speed rpm : 1300

Del.quantity cm3/: 122.0...126.0 > 1000 s: (120.0...128.0)

Spread cm3: 8.00 > 1000 s: (12.0)

Aneroid pressure h: -Speed rpm : 900

Del.quantity cm3/: 69.0...73.0 > 1000 s: (67.0...75.0)

BREAKAWAY

1st version 1mm rack travel less than >

full load rack tr: 10.70

Speed rpm : 1360...1390

STARTING FUEL DELIVERY

Speed rpm: 100

Del.quantity cm3/: 120.0...160.0 > 1000 s: (115.0...165.0)

LOW IDLE

Spread cm3 : 4.00 > 1000 s: (6.50)

Remarks:

: NAVISTAR #1819923c91

Limit shutoff stop screw to 1.0 mm.

A28

Speed

START CUT-OUT

1/min : 280 (290)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB : 4.9.96 Edition : 5,94 Replaces : ISO-4113 Test oil Combination no. : 0 402 646 796 Injection pump Pump designation : PE6P12OA32OLS7858 EP type number : 0 412 626 875 Governor Governor design. : RQ300/1050PA1030-12 Governer no. : 0 421 801 729 Customer-spec. information : MERCEDES-BENZ Customer Engine : OM401LA 1st version kW : 200.0 Rated speed >: 2100 TEST BENCH REQUIREMENTS Test oil inlet temp. *C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 105 assembly> Opening pressure, bar> : 207...210 Orifice plate diameter mm> : 0,8 Test lines : 1 680 750 075 Outside diameter x Wall>thickness : 8.(IOX1.50X1000 x Length mm> (A) Injection pump setting values

> Insp. values in parentheses
> Set equal delivery quant.

> per values ___

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

: (5.45...5.65) Rack travel in mm : 20.00...21.00 Firing order : 6- 3- 5- 2- 4- 1 : 0-60-120-180-240-300 Phasing Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING rpm : 10501st speed Rack travel in mm : 11.70...11.80 Del.quantity cm3/: 18.9...19.1 > 100 s: (18.6...19.4) Spread cm3 : 0.5100 s: (0.9) rpm : 300 2nd speed Rack travel in mm : 4.9...5.5 Del.quantity cm3/: 1.6...2.2 100 s: (1.3...2.5) > Spread cm3 : 0.6100 s: (1.0) GUIDE SLEEVE POSITION Control-lever position Degree: 108...110 rpm : 600 Speed Rack travel in mm : 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1050 Speed Aneroid pressure h: 800 : 189.0...191.0 Del.quantity 1000 : (186.0...194.0) > : 5.00 Spread cm3 1000 : (9.00) > RATED SPEED 1st version Setting point: rpm : 600 Speed Rack travel in mm : 20.0 Testina: 1st rack travel in: 10.75

: 5.50...5.60

Prestroke mm

2nd rack travel in: 4.00 Speed rpm : 1160...1190 4th rack travel in: 1300 **BREAKAWAY** rpm : 0.00...1.50Speed 1st version LOW IDLE 1 1mm rack travel less than Setting point w/out bumper spring rpm : 300 full load rack tr: 10.75 Rack travel in mm: 5.2 Speed rpm : 1090...1106 Testing: STARTING FUEL DELIVERY Speed rpm : 200 Minimum rack trave: 7.60 rpm : 100 rpm : 300 Speed Rack travel in mm : 5.10...5.30 Del.quantity cm3/: 210.0...230.0 Rack travel in mm : 2.00 1000 s: (206.0...234.0) rpm : 360...400 Speed Remarks: Aneroid/Altitude : Compensator Test 1st version Settina : 400 Speed rom hPa : 800 Pressure Rack travel mm : 11.70...11.80 Measurement 1/min: 400 Speed 1st pressure hPa : 350 Rack travel in m: 11.15...11.35 2nd pressure hPa : 200 Rack travel in m: 10.50...10.70 3rd pressure hPa : -Rack travel in m: 9.60...9.90 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 800 rpm : 550 Speed Del.quantity cm3/: 182.0...186.0 1000 s: (179.0...189.0) > cm3 : 8.00 Spread 1000 s: (12.0) Aneroid pressure h: 350 rpm : 400 Speed Del.quantity cm3/: 148.5...151.5 1000 s: (145.5...154.5) > Spread cm3 : -1000 s: (-) > Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 126.0...128.0 1000 s: (123.0...131.0) > cm3 : 8.00 Spread

1000 s: (12.0)

rpm : 1090...1106

Speed

B02

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : MB Test sheet : 4.9.96 Edition : 10.93 Replaces : ISO-4113 Test oil Phasing Combination no. : 0 402 646 796 Injection pump Pump designation : PE6P120A320LS7858 EP type number : 0 412 626 875 Governor Governor design. : RQ300/1050PA1030-5 1st speed : 0 421 801 665 Governer no. Customer-spec. information Customer : MERCEDES-BENZ Engine : 0M401LA 1st version kW : 200.0 Spread >: 2100 Rated speed > TEST BENCH REQUIREMENTS 2nd speed Test oil inlet temp. °C> : 38...42 Overflow valve Spread : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 105 assembly> Speed Opening : 207...210 pressure, bar> Orifice plate diameter mm> : 0,8 Speed Test lines : 1 680 750 075 > Spread Outside diameter x Wall>thickness x Length mm> : 8.00x1.50x1000 (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. Speed > per values _ BEGINNING OF DELIVERY

: 5.50...5.60 Prestroke mm : (5.45...5.65) Rack travel in mm : 20.00...21.00 Firing order : 6-3-5-2-4-1 : 0-60-120-180-240-300 Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING rpm: 1050 Rack travel in mm : 11.70...11.80 Del.quantity cm3/: 18.9...19.1 100 s: (18.6...19.4) cm3 : 0.5100 s: (0.9) rpm : 300 Rack travel in mm: 4.9...5.5 Del.quantity cm3/: 1.6...2.2 100 s: (1.3...2.5) cm3 : 0.6 100 s: (1.0) GUIDE SLEEVE POSITION Control-lever position Degree: 88...96 rpm : 600 Rack travel in mm : 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1050 Aneroid pressure h: 800 Del.quantity : 189.0...191.0 1000 : (186.0...194.0) : 5.00 cm3 1000 : (9.00) RATED SPEED 1st version Setting point: : 600 rpm Rack travel in mm : 20.0 Testing:

1st rack travel in: 10.75

Test pressure, bar: 25...27

Speed rpm : 1090...1106 2nd rack travel in: 4.00 rpm : 1160...1190 Speed 4th rack travel in: 1300 Speed rpm : 0.00...1.50 LOW IDLE 1 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.2 Testing: rpm : 200 Speed Minimum rack trave: 8.00 rom : 300 Rack travel in mm : 5.10...5.30 Rack travel in mm : 2.00 Speed rpm : 360...400 Aneroid/Altitude Compensator Test 1st version Setting : 1050 Speed rom Pressure hPa : 800 Rack travel mm : 11.70...11.80 Measurement 1/min : 400 Speed 1st pressure hPa : 350 Rack travel in m: 10.90...11.00 2nd pressure hPa : 200 Rack travel in m: 10.10...10.30 3rd pressure hPa : -Rack travel in m: 9.60...9.90 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 800 rpm : 550 Speed Del.quantity cm3/: 182.0...186.0 1000 s: (179.0...189.0) > cm3 : 8.00 Spread 1000 s: (12.0) Aneroid pressure h: 350 rpm : 400 Speed Del.quantity cm3/: 148.5...151.5 1000 s: (145.5...154.5) > Spread cm3 : -1000 s: (-) > Aneroid pressure h: rpm : 500 Del.quantity cm3/: 126.0...128.0 1000 s: (123.0...131.0) > cm3 : 8.00 Spread

1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.75 Speed rpm : 1090...1106

STARTING FUEL DELIVERY

Remarks:

:

B04

Note remarks

: SCA 9,0 h Test sheet : 03,12,92 Edition : 16.2.90 Replaces : ISO-4113

Test oil

: 0 402 646 824 Combination no.

Injection pump

Pump designation : PE6P120A320RS7111

EP type number

: 0 412 626 809

Governor

Governor design. : RQ750PA758 Governer no. : 0 421 801 297

Customer-spec. information

Customer

: SAAB-SCANIA

Engine

: DS 9 46,47

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C> : 38...42

Overflow valve

: 1 417 413 025 >

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 019 assembly>

Openina

: 207...210 pressure, bar>

Orifice plate

diameter mm> : 0,8

Test lines : 1 680 750 015

Outside diameter

x Wall>thickness

x Length mm> : 6.00x1.50x600

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

: 5.00...5.10 Prestroke mm

: (4.95...5.15)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ}> : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

rpm: 700 1st speed

Rack travel in mm : 12.30...12.40

Del.guantity cm3/: 17.7...17.9

100 s: (17.4...18.2)

cm3 : 0.6Spread

> > 100 s: (0.9)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 700 Speed

: 177.0...179.0 Del.quantity 1000 : (174.0...182.0) >

cm3 : 6.00 Spread > 1000 : (9.00)

RATED SPEED

1st version

Setting point:

rpm Rack travel in mm : 16.5

Testing:

1st rack travel in: 11.30 rpm : 750...755 Speed

2nd rack travel in: 4.00

rpm : 784...797 Speed

5th rack travel in: 850

rpm : 0.00...1.00 Speed

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30

rpm : 750...755 Speed

STARTING FUEL DELIVERY

B05

Speed rpm : 100
Del.quantity cm3/ : 240.0...290.0
Rack travel in mm : 20.00...21.00

HIGH IDLE

1st version
Rack travel in mm : 5.80...6.00
Spread cm3 : 4.00
> 1000 s: (7.00)

Remarks:

APPLICATION

Generator

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : SCA Test sheet Edition : 16.03.93 Replaces : ISO-4113 Test oil Combination no. : 0 402 646 881 Injection pump Pump designation : PE6P12OA72ORS7126 EP type number : 0 412 626 815 Governor Governor design. : RQV300...900PA795-4 Governer no. : 0 421 813 888 Customer-spec. information Customer : SCANIA Engine : DS 11 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 2.30 Test nozzle holder : 1 688 901 019 assembly> Opening pressure, bar> : 207...210 Orifice plate diameter mm> : 0,8 : 1 680 750 015 Test lines Outside diameter x Wall>thickness : 6.00X1.50X600 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values _

: 0-60-120-180-240-300 Phasing Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 700 Rack travel in mm : 14.10...14.20 Del.quantity cm3/: 23.4...23.6 100 s: (23.1...23.9) Spread cm3 : 0.6100 s: (0.9) 2nd speed rpm : 200 Rack travel in mm: 4.4...4.6 Del.quantity cm3/ : 1.5...1.9 100 s: (-) Spread cm3 : 0.3100 s: (0.6) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 300 1st speed : 1.30...1.70 travel mm rpm : 350 2nd speed travel mm : 1.90...2.50 rpm : 650 3rd speed : 4.70...5.30 travel mm rpm : 945 4th speed : 7.90...8.10 travel mm 5th speed rpm : 1045 : 9.20...9.60 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 970 Speed Rack travel in mm : 11.50...13.10 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 700 Aneroid pressure h: 900 Del.quantity : 234.0...236.0 1000 : (231.0...239.0) > cm3 : 6.00 Spread

Firing order : 1-5-3-6-2-4

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 25...27

Rack travel in mm : 9.00...12.00

: 5.00...5.10

: (4.95...5.15)

1000 : (9.00) RATED SPEED 1st version Control lever

position> degrees: 93...101 Testing: 1st rack travel in: 13.10

rpm : 940...950 Speed 2nd rack travel in: 4.00 rpm : 1030...1060 Speed

4th rack travel in: 1150 rpm : 0.00...1.00 Speed

LOW IDLE 1 Control lever position degrees: 61...69

Testina: Speed rpm : 100 Minimum rack trave: 10.00

Speed rpm : 300 Rack travel in mm : 4.50...4.70 Rack travel in mm : 2.00

rpm : 330...390 Speed

Aneroid/Altitude Compensator Test

1st version Setting Speed rom

: 500 hPa : 900 Pressure

: 14.10...14.20 Rack travel mm

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 10.20...10.60

2nd pressure hPa : 440

Rack travel in m: 12.00...12.10

3rd pressure hPa : 270

Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: 1500 Speed rpm: 950

Del.quantity cm3/: 228.0...236.0 1000 s: (226.0...238.0)

Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 152.0...154.0 1000 s: (149.0...157.0) **BREAKAWAY**

1st version 1mm rack travel less than

full load rack tr: 12.80 Speed rpm : 990...1000

STARTING FUEL DELIVERY

rpm : 100

Del.quantity cm3/: 150.0...180.0 Rack travel in mm : 10.20...10.60

LOW IDLE

Speed rpm : 250

Rack travel in mm : 4.60...4.80

Remarks:

Start-of-delivery setting with ROBO

:

diaphragm.

APPLICATION

Generator set

B08

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : SCA Test sheet : 16.08.93 Edition : 10.92 Replaces Test oil : ISO-4113 Combination no. : 0 402 646 937 Injection pump Pump designation : PE6P12OA72ORS71880 EP type number : 0 412 626 846 Governor Governor design. : RQV200...950PA725-7 : 0 421 813 803 Governer no. Customer-spec. information Customer : SCANIA Engine : DSC11 21 TEST BENCH REQUIREMENTS Test oil inlet temp. °C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 2.50 Test nozzle holder : 1 688 901 104 assembly> Opening pressure, bar> : 250...253 Orifice plate diameter mm> : 0,7 : 1 680 750 008 Test lines Outside diameter x Wall>thickness : 6.00x2.00x600 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant.

: 1-5-3-6-2-4 Firing order Phasing : 0-60-120-180-240-300 Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm : 700 Rack travel in mm : 12.70...12.80 Del.quantity cm3/: 21.9...22.1 > 100 s: (21.6...22.4) Spread cm3 : 0.8> 100 s: (1.2) rpm : 225.0 2nd speed Rack travel in mm: 4.6...5.2 Del.quantity cm3/: 1.5...1.9 100 s: (1.2...2.2) cm3 : 0.4Spread 100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 225 travel mm : 1.20...1.60 2nd speed rpm : 350 : 2.40...3.00 travel mm 3rd speed rpm : 650 travel mm : 4.50...5.10 4th speed rpm : 1045 travel mm : 8.40...8.60 rpm : 1125 5th speed travel mm : 9.30...9.70 GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1150 Rack travel in mm : 7.00...12.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 700 Aneroid pressure h: 1500 Del.quantity : 219.0...221.0 > 1000 : (216.0...224.0) cm3 : 8.00 Spread

> per values ___

Prestroke mm

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Rack travel in mm : 9.00...12.00

: 4.40...4.50

: (4.35...4.55)

1000 : (12.00)

RATED SPEED

1st version Control lever

position> degrees: 108...116

Testing:

1st rack travel in: 11.70

Speed rpm : 990...1000

2nd rack travel in: 4.00

Speed rpm : 1105...1135

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 58...66

Testing:

Speed rom : 100 Minimum rack trave: 6.20 rpm : 225

Rack travel in mm : 4.60...4.80

Rack travel in mm: 2.00 rpm : 350...410 Speed

Aneroid/Altitude Compensator Test

1st version Setting

: 500 Speed rpm hPa : 1500 Pressure

Rack travel mm : 12.70...12.80

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 10.30...10.70

2nd pressure hPa : 440

Rack travel in m: 12.00...12.10

3rd pressure hPa : 270

Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500 rpm : 950

Del.quantity cm3/: 202.0...210.0 1000 s: (200.0...212.0)

Aneroid pressure h: -

rpm : 500 Speed

Del.quantity cm3/: 151.0...155.0 > 1000 s: (149.0...157.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70

Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 150.0...180.0 1000 s: (146.0...184.0) Rack travel in mm : 10.30...10.70

LOW IDLE

Speed rpm : 225

Rack travel in mm : 4.60...4.80

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Start-of-delivery setting with ROBO diaphraam.

B10

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 5.50...5.60 : (5.45...5.65) Rack travel in mm : 20.00...21.00 Note remarks : 8- 7- 2- 6- 3- 5-Firing order 4- 1 Test sheet : MB : 28.10.93 Edition Replaces : 08.92 Test oil : ISO-4113 Phasing : 0-45-90-135-180-225-Combination no. : 0 402 648 931 270-315 Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ Injection pump Pump designation : PE8P120A320LS7847 Time to cyl. no. : 8 EP type number : 0 412 628 863 BASIC SETTING Governor Governor design: RQ300/950PA1032-1 : 0 421 801 646 1st speed rpm: 550 Governer no. Customer-spec. information Rack travel in mm : 13.50...13.60 : MERCEDES-BENZ Customer Del.quantity cm3/: 23.6...23.8 : 0M402 LA Engine 100 s: (23.3...24.1) 1st version kW : 280.0 >: 1900 Spread cm3 : 0.6 Rated speed 100 s: (0.9) TEST BENCH REQUIREMENTS > rpm : 300.0 Test oil 2nd speed inlet temp. *C> Rack travel in mm: 5.2...5.8 : 38...42 Del.quantity cm3/: 1.0...1.6 100 s: (0.7...1.9) Overflow valve > cm3 : 0.8 : 1 417 413 025 Spread 100 s: (1.0) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder : 1 688 901 105 Degree: -2 assembly> rpm : 600 Rack travel in mm : 19.20...20.80 Opening pressure, bar> : 207...210 FULL LOAD DELIV. AT FULL LOAD STOP Orifice plate diameter mm> : 0,8 1st version Speed rpm : 550 Aneroid pressure h: 1200 Del.quantity Test lines : 1 680 750 075 : 236.0...238.0 1000 : (233.0...241.0) Outside diameter Spread cm3 : 6.00 1000 : (9.00) x Wall>thickness : 8.00x2.50x1000 x Length mm> RATED SPEED (A) Injection pump setting values 1st version > Insp. values in parentheses > Set equal delivery quant. Setting point: > per values ___ rpm : 600 Speed Rack travel in mm: 20.0 BEGINNING OF DELIVERY Test pressure, bar: 25...27

Testing:

1st rack travel in: 12.10 rpm : 990...1006 Speed 2nd rack travel in: 4.00 1st version rpm : 1065...1095 Speed 4th rack travel in: 1350 rpm : 0.00...1.50Speed LOW IDLE 1 Spread Setting point w/out bumper spring > rpm : 300 Rack travel in mm: 5.5 Speed Testing: > rpm : 200 Speed Minimum rack trave: 8.00 Speed rpm : 300 Speed Rack travel in mm : 5.40...5.60 > Rack travel in mm : 2.00 Spread rpm : 360...400 Speed > CONSTANT REGULATION rpm : 300...450 **BREAKAWAY** Speed TORQUE CONTROL 1st version Dimension a mm : 0.55 Torque control curve - 1st version 1st speed rpm : 550 Rack travel in m: 13.50...13.60 Speed 2nd speed rpm : 950 Rack travel in m: 13.00...13.20 3rd speed rpm : 800 Rack travel in m: 13.50...13.60 4th speed rpm : 875 Speed rpm Rack travel in m: 13.25...13.45 Aneroid/Altitude Compensator Test Remarks: 1st version Settina : 400 Speed rom hPa : 1200 Pressure : 13.50...13.60 Rack travel mm Measurement 1/min: 400 Speed 1st pressure hPa : 650 Rack travel in m: 12.90...13.00 2nd pressure hPa : 300 Rack travel in m: 11.35...11.55 3rd pressure hPa : -Rack travel in m: 10.45...10.75 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS

Aneroid pressure h: 1200 Speed rpm : 950 Del.quantity cm3/: 214.0...218.0 1000 s: (211.0...221.0) cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: 650 rpm : 400 Del.quantity cm3/: 196.5...199.5 1000 s: (193.5...202.5) Aneroid pressure h: rpm : 500 Del.quantity cm3/: 134.0...136.0 1000 s: (131.0...139.0) cm3 : 8.00 1000 s: (12.0)

1mm rack travel less than full load rack tr: 12.10 rpm : 990...1006

STARTING FUEL DELIVERY

: 100 Del.quantity cm3/: 45.0...65.0 1000 s: (41.0...69.0) Rack travel in mm : 10.50...10.70

Note remarks

Test sheet : MB : 4.9.96 Edition : 6.94 Replaces Test oil : ISO-4113

: 0 402 648 955 Combination no.

Injection pump

Pump designation: PE8P120A320LS7859 EP type number : 0 412 628 869

Governor

Governor design. : RQ300/950PA1031-9 : 0 421 801 675 Governer no.

Customer-spec. information

: MERCEDES-BENZ Customer

Engine : OM442LA

1st version kW : 320.0 >: 1900 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C> : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 105 assembly>

Opening

: 207...210 pressure, bar>

Orifice plate

diameter mm> : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall>thickness

: 8.00x1.50x1000 x Length mm>

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30

> : (5.15...5.35) Rack travel in mm : 20.00...21.00

: 8- 7- 2- 6- 3- 5- 4-Firing order

Phasing : 0-45-90-135-180-225-

270-315

Tolerance + - °> : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 550

Rack travel in mm : 13.70...13.80

Del.quantity cm3/: 24.4...24.6

100 s: (23.7...24.9)

cm3 : 0.6Spread

> 100 s: (0.9) >

rpm : 300 2nd speed

Rack travel in mm: 4.9...5.5 Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.5)

cm3 : 0.6Spread 100 s: (1.0)

GUIDE SLEEVE POSITION Control-lever position

Degree: 94...102

rpm : 600 Speed

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 550 Aneroid pressure h: 1000

Del.quantity : 244.0...246.0 1000 : (241.0...249.0)

: 6.00 cm3 Spread 1000 : (9.00) >

RATED SPEED

1st version

Setting point:

Speed rpm : 600 Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.75 Spread rpm : 990...1006 Speed 2nd rack travel in: 4.00 rpm : 1065...1095 Speed 4th rack travel in: 1200 **BREAKAWAY** Speed rpm : 0.00...1.501st version LOW IDLE 1 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.2 Speed Testing: Speed rpm : 200 Minimum rack trave: 7.50 rpm : 300 Speed Speed Rack travel in mm : 5.10...5.30 Rack travel in mm: 2.00 Speed ממיז : 360...400 Remarks: Aneroid/Altitude : Compensator Test 1st version Settina : 400 Speed rpm hPa : 1000 Pressure Rack travel mm : 13.70...13.80 Measurement 1/min: 400 Speed 1st pressure hPa : 550 Rack travel in m: 13.00...13.20 2nd pressure hPa : 250 Rack travel in m: 10.90...11.10 3rd pressure hPa : -Rack travel in m: 9.55...9.85 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 : 950 rpm Speed Del.quantity cm3/: 233.0...237.0 1000 s: (232.0...242.0) > Spread cm3 : 8.001000 s: (12.0) Aneroid pressure h: 550 : 400 Speed rpm Del.quantity cm3/: 208.5...211.5 1000 s: (205.5...214.5) > cm3 : -Spread > 1000 s: (-) Aneroid pressure h: -: 500 Speed rpm Del.quantity cm3/: 134.0...136.0

cm3 : 8.00 1000 s: (12.0) imm rack travel less than full load rack tr: 12.75 rpm : 990...1006 STARTING FUEL DELIVERY rpm : 100 Del.quantity cm3/: 260.0...280.0 1000 s: (256.0...284.0)

1000 s: (131.0...139.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : UNI 9,5 i 1 Test sheet : 01.03.93 Edition : 21.1.93 Replaces Test oil : ISO-4113 Combination no. : 0 402 746 902 Injection pump Pump designation : PES6P120A720RS7224 EP type number : 0 412 726 840 Governor Governor design. : RQV275...1100PA975-1 : 0 421 815 267 Governer no. Customer-spec. information Customer : IVECO-UNIC : 8460.41.320 Engine TEST BENCH REQUIREMENTS Test oil inlet temp. *C> : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 105 assembly> Opening. : 207...210 pressure, bar> Orifice plate diameter mm> : 0,8 Test lines : 1 680 750 008 Outside diameter x Wall>thickness : 6.00x2.00x600 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values ____ BEGINNING OF DELIVERY

Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasina : 0-60-120-180-240-300 Tolerance $+ - ^{\circ} > : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 11.20...11.30 Del.quantity cm3/: 20.9...21.1 100 s: (20.6...21.4) cm3 : 0.5Spread > 100 s: (0.9) 2nd speed rpm : 275.0Rack travel in mm : 5.1...5.5 Del.quantity cm3/ : 3.2...3.8 100 s: (2.9...4.1) > Spread cm3 : 0.8 100 s: (1.2) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 1145 1st speed : 10.30...10.50 travel mm rpm : 275 2nd speed : 1.30...1.50 travel mm rpm : 450 3ird speed : 3.40...4.00 travel mm rpm : 750 4th speed travel mm : 5.90...6.30 rpm : 1350 5th speed : 13.00...14.00 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1140 Speed Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1100 Aneroid pressure h: 1200 Del.quantity : 209.0...211.0

1000 : (206.0...214.0)

Prestroke mm

Test pressure, bar: 25...27

: 5.10...5.20

: (5.05...5.25)

Spread cm3 : 5.00 1000 : (9.00) RATED SPEED 1st version Control lever position> degrees: 115...123 Testing: 1st rack travel in: 10.20 rpm : 1140...1150 Speed 2nd rack travel in: 4.00 rpm : 1200...1230 Speed 4th rack travel in: 1350 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 64...72 Testing: Speed : 100 rpm Minimum rack trave: 6.80 : 275 Speed rpm Rack travel in mm : 5.20...5.40 CONSTANT REGULATION rpm : 270...400 Speed TORQUE CONTROL Dimension a mm : ? Torque control curve - 1st version rpm : 1100 1st speed Rack travel in m: 11.20...11.30 : 700 2nd speed rpm Rack travel in m: 9.90...10.10 3rd speed rpm : 900 Rack travel in m: 10.70...10.90 4th speed rpm : 400 Rack travel in m: 9.30...9.70 Aneroid/Altitude Compensator Test 1st version Settina : 1100 Speed rpm Pressure hPa : 1200 Rack travel mm : 11.20...11.30 Measurement 1/min : 1100 Speed 1st pressure hPa : -Rack travel in m: 7.70...7.90 2nd pressure hPa : 600 Rack travel in m: 10.60...10.70

Rack travel in m: 9.10...9.50 START CUT-OUT Speed 1/min: 220 (240) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 700 Del.quantity cm3/: 188.0...194.0 1000 s: (185.0...197.0) Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 120.0...122.0 1000 s: (117.0...125.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 10.20 rpm : 1140...1150 Speed STARTING FUEL DELIVERY Speed rpm : 100
Del.quantity cm3/ : 150.0...180.0 1000 s: (146.0...184.0) LOW IDLE Speed rpm : 275 Rack travel in mm : 5.10...5.50 Del.quantity cm3/: 32.0...38.0 > 1000 s: (29.0...41.0) cm3 : 8.00 Spread > 1000 s: (12.00) Remarks: Setting and blocking of pointer of

start-of-delivery sensor on cyl. 1 start of delivery

3rd pressure hPa : 420

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Test sheet : UNI : 16.11.93 Edition : 18.12.92 Replaces Test oil : ISO-4113

: 0 402 746 937 Combination no.

Injection pump

Pump designation : PES6P120A720RS7268

EP type number : 0 412 726 884

Governor

Governor design. : RQ275/1100PA915-2 Governer no. : 0 421 801 671

Customer-spec. information

Customer : IVECO-UNIC

Engine : 8460.41.603

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C> : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

assembly> : 1 688 901 105

Opening

pressure, bar> : 207...210

Orifice plate

diameter mm> : 0,8

Test lines : 1 680 750 089

Outside diameter x Wall>thickness

x Length mm> : 8.00x1.50x600

(A) Injection pump setting values

> Insp. values in parentheses

> Set equal delivery quant.

> per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

: 5.10...5.20 Prestroke mm : (5.05...5.25)

Rack travel in mm : 9.00...12.00

: 1-5-3-6-2-4 Firing order

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ}> : 0.30 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

rpm: 1100 1st speed

Rack travel in mm : 11.90...12.00

Del.quantity cm3/: 19.5...19.7

> 100 s: (19.2...20.0)

cm3 : 0.5Spread

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 6.2...6.4 Del.quantity cm3/: 2.0...2.6 100 s: (1.7...2.9)

cm3 : 0.8Spread 100 s: (1.2)

GUIDE SLEEVE POSITION Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 1100 Speed Aneroid pressure h: 900

Del.quantity : 193.0....200.0)

: 5.00 cm3 Spread 1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600 Rack travel in mm: 20.0

Testing:

1st rack travel in: 10.90

rpm : 1145...1160 Speed

2nd rack travel in: 4.00

rpm : 1230...1260 Speed

B17

4th rack travel in: 1350

rpm : 0.00...1.00Speed

LOW IDLE 1

Setting point w/out bumper spring

rpm : 275 Rack travel in mm: 6.3

Testing:

Speed rpm : 100 Minimum rack trave: 7.80 rpm : 275

Rack travel in mm : 6.20...6.40

Rack travel in mm : 2.00

rpm : 345...385 Speed

TORQUE CONTROL

Dimension a mm

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 11.90...12.00

2nd speed rpm : 550

Rack travel in m: 11.80...12.00

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 500 hPa : 900 Pressure

Rack travel mm : 11.90...12.00

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 8.80...9.00

2nd pressure hPa : 310

Rack travel in m: 10.80...10.90

3rd pressure hPa : 240

Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 550 Del.quantity cm3/ : 213.0...219.0

1000 s: (210.0...222.0)

Aneroid pressure h: -

rpm : 500

Del.quantity cm3/: 111.0...113.0

1000 s: (108.0...116.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90

rpm : 1145...1160 Speed

STARTING FUEL DELIVERY

rpm : 100 Speed

Del.quantity cm3/: 95.0...120.0 1000 s: (91.0...129.0)

Remarks:

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : NAV : 13.01.94 Edition Replaces : 6.93 Test oil : ISO-4113 : 0 402 746 940 Combination no. Injection pump Pump designation: PES6P120A320LS7284 : 0 412 726 891 EP type number Governor Governor design. : RQV350...1000PA1054K : 0 421 815 337 Governer no. Customer-spec. information Customer : NAV Engine : DTA-531 1st version kW : 224.0 Rated speed >: 2000 Rated speed >: 2000 TEST BENCH REQUIREMENTS Test oil inlet temp. *C> : 38...42 Overflow valve : 1 417 413 076 Inlet press., bar: 2.80 Test nozzle holder : 1 688 901 101 assembly> Openina pressure, bar> : 207...210 Orifice plate diameter mm> : 0,6 Test lines : 1 680 750 008 Outside diameter x Wali>thickness : 6.00x2.00x600 x Length mm> (A) Injection pump setting values > Insp. values in parentheses > Set equal delivery quant. > per values ____

Prestroke mm : 2.85...2.95 : (2.80...3.00) Rack travel in mm : 14.00...17.00 Firina order : 1-5-3-6-2-4 Phasina : 0-60-120-180-240-300 Tolerance $+ - ^{\circ}> : 0.50 (0.75)$ BASIC SETTING 1st_speed rpm: 1000 Rack travel in mm : 14.30...14.40 Del.quantity cm3/: 21.8...22.0 > 100 s: (21.5...22.3) Spread cm3 : 0.8> 100 s: (1.2) 2nd speed rpm : 325 Rack travel in mm : 6.6...6.8 Del.quantity cm3/: 2.8...3.4 100 s: (2.6...3.6) Spread cm3 : 0.5 100 s: (0.9) > (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 350 : 1.40...1.60 travel mm rpm : 500 2nd speed : 3.70...4.10 travel mm 3rd speed rpm : 800 : 6.30...6.70 travel mm rpm : 1000 4th speed : 8.60...8.80 travel mm rpm : 1150 5th speed : 10.50...10.90 travel mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1000 Speed Aneroid pressure h: 1500 : 218.0...220.0 Del.quantity 1000 : (215.0...223.0) > : 8.00 cm3 Spread 1000 : (12.0) >

RATED SPEED

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

1st version FUEL DELIVERY CHARACTERISTICS Control lever position> degrees: 114...126 Testing: 1st version 1st rack travel in: 13.30 Aneroid pressure h: 800 rpm : 1050...1080 rpm : 1500 2nd rack travel in: 4.00 Del.guantity cm3/: 225.5...231.5 Speed rpm : 1170...1180 1000 s: (222.5...234.5) 4th rack travel in: 1250 cm3 : 8.00 Spread rpm : 0.00...1.00Speed 1000 s: (12.0) Aneroid pressure h: rpm : 800 LOW IDLE 1 Speed Del.quantity cm3/: 88.0...92.0 Control lever 1000 s: (86.0...94.0) position degrees: 70...82 Testing: Speed rpm : 275 BREAKAWAY Minimum rack trave: 7.20 Speed rpm : 325 1st version Rack travel in mm : 6.60...6.80 1mm rack travel less than CONSTANT REGULATION full load rack tr: 13.30 : 330...520 : 1050...1080 Speed Speed rom rpm TORQUE CONTROL STARTING FUEL DELIVERY Dimension a mm : ? Torque control curve - 1st version rpm : 1000 1st speed Speed rpm : 100 Del.quantity cm3/: 125.0...165.0 Rack travel in m: 14.3...14.4 1000 s: (115.0...175.0) rpm : 650 2nd speed Rack travel in m: 14.2...14.4 3rd speed rpm : 500 LOW IDLE Rack travel in m: 13.3...13.7 4th speed rpm : 800 rpm : 325 Rack travel in mm : 6.60...6.80 Rack travel in m: 14.2...14.4 Del.quantity cm3/: 28.0...34.0 > 1000 s: (26.0...36.0) Aneroid/Altitude cm3 : 8.00 Compensator Test Spread 1000 s: (12.00) 1st version Remarks: Setting : NAVISTAR #1819915091 : 1000 Speed rom Pressure hPa : 1500 Setting and blocking of pointer of : 14.30...14.40 Rack travel mm start-of-delivery sensor on cyl. 1 start of delivery Measurement Speed 1/min: 1000 Bow dimension: Sliding-sleeve position = 37.0 mm Delivery-valve spring pre-tension = 6.30...6.40 mm. 1st pressure hPa : -Rack travel in m: 9.20...9.60 2nd pressure hPa : 395 Permissible alteration from 6.00...6.70 Rack travel in m: 10.70...10.80 3rd pressure hPa : 1010 Rack travel in m: 13.0...13.4 START CUT-OUT 1/min: 265 (275) Speed

B20

Start-of-delivery blocking 8,75° after start of delivery of cylinder no. 1.

Starting/full-load transition speed from holding magnet = 450 1/min.

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : 14.08.96 Edition Calibrating oil : ISO-4113 : VE4/11F2250R676-2 Injection pump Type number : 0 460 414 135 Customer Part-No. : Customer-specific information Customer : VOLVO PENTA : TAMD22 Engine 1/min: 74 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Electronically> Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly> Openina Pressure> bar: 204.00...210.00 Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 073 mm: 450 mm: -> (from BDC): -

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> Start of delivery Prestroke Start of delivery block Piston stroke mm: 1,1 mm: +-0.02> Outlet > : A Injection-pump setting values Test specifications in parentheses Timing-device travel B23

1/min: 1200 Speed Charge press. hPa: 1200 Setting value mm: 2.20...2.60 Supply-pump pressure

1/min: 1200 Speed Charge press hPa: 1200 Setting value bar: 6.30...6.80

Full-load del. with charge press.:

1/min: 1600 Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 57.0...58.0

cm3/: 2.5 Dispersion 1000s.: (3.5)

Full-load del. w/out charge press.:

Speed 1/min: 800 Del. quantity cm3/ 1000s.: 31.5...32.5

Low-idle speed regulation

Speed 1/min: 425 Del. quantity cm3/ 1000s.: 9.0...11.0 Del. quantity cm3/: 3.0

1000s.: (3.0)

Full-load speed regulation

1/min: 2330 Speed Charge press hPa: 1200 Del. quantity cm3/

1000s.: 47.0...53.0

Start:

Speed 1/min: 100 Del. quantity cm3/: 50.00...110.00 1000s.: 50.00

Load-dependent start of delivery: Inj.-qty.dif.measurement:

1/min: 1250 Charge press hPa: -Inj.-qty. cm3/ difference> 1000s.: - 7,0...9,0 *

SP press.-dif.measurement

1st speed 1/min: 1250 Charge press hPa: --Supply pump

pressure>

difference> bar: - 0.10.3 *	+ Del. quantity cm3/: 0,030,0 + > 1000s.: -
Inspection-pump test specifications	4th speed 1/min: 2330
Test specifications in parentheses	+ Charge press. hPa: 1200
rest specifications in parentheses	t charge press. Mra: 1200
#3~3 da3	+ Del. quantity cm3/: 47.053.0
Timing-device characteristic:	+ > 1000s.: (44.056.0)
	+ 5th speed 1/min: 2250
1st speed 1/min: 1000	+ Charge press. hPa: 1200
Charge press hPa: 1200	+ Del. quantity cm3/: 58.062.0
TD travel mm: 0.91.7	+ > 1000s.: (57.063.0)
> mm; (0.7,1.9)	+ 6th speed 1/min: 1600
2nd speed 1/min: 1900	+ Charge press. hPa: 1200
Charge press hPa: 1200	<pre>Del. quantity cm3/: 57.058.0</pre>
TD travel mm: 5.56.3	+ > 1000s.: (56.258.8)
> mm: (5.36.5)	† 7th speed 1/min: 800
3rd speed	Charge press. hPa: -
Charge press hPa: 1200	+ Del. quantity cm3/: 31.532.5
	+ > 1000s.: (29.734.3)
TD travel mm: 2.22.6 > mm: (1.83.0)	
	1
Supply-pump pressure characteristic:	Mech. shutoff:
1st speed 1/min: 750	1st speed 1/min: 2250
Charge press. hPa: 1200	+ Charge press. hPa: 1200
Supply-pump	+ Del. quantity cm3/: 0.003.00
pressure> bar: 5.86.4	+ > 1000s.: -
2nd speed 1/min: 1200	1
Charge press. hPa: 1200	Flectr. shutoff:
	T Electi. Silutoit.
Supply-pump	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
pressure> bar: 6.36.9	+ 1st speed 1/min: 425
3rd speed 1/min: 2250	+ Charge press. hPa: -
Charge press. hPa: 1200	+ Del. quantity cm3/: 0.003.00
Supply-pump	+ > 1000s.: -
pressure> bar: 8.69.2	†
	† Idle delivery:
Overflow quantity at overflow valve	+ .
	+ 1st speed
1st speed 1/min: 550	+ Del. quantity cm3/: 9.011.0
Charge press. hPa: -	+ > 1000s.: (6.014.0)
Overflow : 55.60100.00	+ Dispersion cm3/: 3.0
quantity> cm3/10s: (40.60115.00)	+ > 1000s.: (3.0)
2nd speed 1/min: 2250	+ 2nd speed 1/min: 475
Charge press. hPa: -	+ Del. quantity cm3/: 1.56.5
Overflow : 83.40166.80	+ > 1000s.: (0.08.0)
quantity> cm3/10s: (68.40181.80)	+ 3rd speed 1/min: 580
quality by sillow took took to the contract	+ Del. quantity cm3/: 0.03.0
Delivery-quant. and breakaway char.:	+ > 1000s.: -
becavery quarter and breakaway chart.	10000.
	Load-dependent start of delivery:
1st speed 1/min: 750	Injqty.dif.measurement:
•	I III. quy.u i i illeasur ellieric.
Charge-air pressure-setting	1st speed 1/min: 1250
point> hPa: 300	
Del. quantity cm3/: 46.047.0	+ Charge press. hPa: -
> 1000s.: (44.548.5)	+ Injqty. cm3/ : - 9,015.0 #
2nd speed	difference> 1000S.: (-0.816.0) #
Charge press. hPa: 1200	+ 2nd speed 1/min: 1250
Del. quantity cm3/: 0.03.0	+ Charge press. hPa: -
> 1000s.: -	+ Injqty. cm3/: 4.06.0 'Z
3rd speed 1/min: 2440	+ difference> 1000s.: -
Charge press. hPa: 1200	+

```
TD-travel dif.measurement:
             1/min: 1250
1st speed
Charge press. hPa: -
             : -0.8...1.2 #
TD-travel
difference>
               mm: -
2nd speed 1/min: 1250
Charge press. hPa: -
             : -1.3...1.7 'Z
TD-travel
Automatic starting fuel delivery:
            1/min: 170
1st speed
Del. quantity cm3/: 60.0...110.0
            1000s.: -
2nd speed
             1/min: 300
Del. quantity cm3/: 55.0...85.0
            1000s.: -
             1/min: 100
4th speed
Del. quantity cm3/: 50.0...110.0
            1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                 : -
Rated voltage
Mounting and assembly dimensions:
Designation
                mm: 3,2...3,4
K
KF
                mm: KOT
                mm: 1,65
mm: 7,0
mm: 23.0...27.0
MS1
LDA stroke
Ya
                mm: 52.0...66.0
Yb
Remarks:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end
Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
Lever on distributor-head end
```

B25

Z = Absolute delivery

BOSCH-INJ, -PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ROVER : 14.08.96 Edition Calibrating oil : ISO-4113 Injection pump : VE4/11F2000R509-3 Type number : 0 460 414 136 Customer Part-No. : Customer-specific information Customer : GEMINI 3 TA Speed 1/min: 83 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Electronically> : -Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 116 assembly> Opening bar: 204.00...210.00 Pressure> Perforated-plate mm: 0.5 diameter> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450 Start of delivery Prestroke mm: -> (from BDC): -Start of delivery block Piston stroke mm: 1,4 mm: +-0.02Outlet > : C Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1600

Charge press. hPa: 1000 Setting value mm: 3,40...3.80 Shutoff electromagnet>Volt: 12 Supply-pump pressure Speed 1/min: 1600 Charge press hPa: 1000 Setting value bar: 6.50...7.10 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1400 Sneed Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 65,7...66.7 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 3.0 1000s.: (4.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 37.3...38.3 Shutoff electromagnet>Volt: 12 Low-idle speed regulation Speed 1/min: 350 Del. quantity cm3/ 1000s.: 9.5...13.5 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 4.0 1000s.: (4.0) Full-load speed regulation 1/min: 2200 Speed Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 50.5...54.5 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 90.5...105.5 1000s.: 90.5 mind> Shutoff electromagnet>Volt: 12 Inspection-pump test specifications

Speed

Test specifications	in parentheses	t	Charge-air pres		
		+	point>	hPa:	
Timing-device chara	cteristic:	+	LDA-stroke	mm:	6.4
		+	Shutoff		
1st speed 1/min:	1400	+	electromagnet>	/olt:	12
Charge press hPa:	1000	+	Del. quantity		
TD travel mm:	1.72.5	1			(34.641.0)
TD travel mm:	(1.33.0)	7	2nd speed 1/		
electromagnet>Volt:		T	Charge press.		
2nd aread 1/nin	1400	T		iira.	1000
2nd speed 1/min:		†	Shutoff		40
Charge press hPa:		+	electromagnet \		
TD travel mm:	3.43.8	+	Del. quantity of		
> mm:	(2,84.4)	+		00s.:	
Shutoff		+	3rd speed 1/	min:	2400
electromagnet>Volt:	12	+	Charge press.	hPa:	1000
3rd speed 1/min:		+	Shutoff		
Charge press hPa:		1	electromagnet>\	/olt•	12
TD travel mm:		1	Del. quantity		
> mm:		S			(10.022.0)
ini.	(3.3,/.3)	T			
		T	4th speed 1/		
Supply-pump pressure	e characteristic:	+	Charge press.	hPa:	1000
		+	Shutoff		
1st speed 1/min:		+	electromagnet>\		
Charge press. hPa:	1000	+	Del. quantity of	:m3/:	50.554.5
Supply-pump		+			(48.057.0)
	5.86.4	1	5th speed 1/		
Shutoff		1	Charge press.		
electromagnet>Volt:	12	1	Shutoff	7 H G 1	1000
		T	electromagnet>\	101+0	10
		T	Pol municipality	7/	12 17
Charge press. hPa:	1000	+	Del. quantity of		
Supply-pump		+			(62.568.5)
pressure> bar:	6.57.1	+	6th speed 1/		
Shutoff		+	Charge press.	hPa:	1000
electromagnet>Volt:	12	+	Shutoff		
3rd speed 1/min:	2000	+	electromagnet>V	olt:	12
Charge press. hPa:		+	Del. quantity of		
Supply-pump		+			(63.469.0)
pressure> bar:	7.78.3	1	7th speed 1/		
Shutoff		1	Charge press.		
electromagnet>Volt:	12	1	Shutoff	in a.	1000
etectromagnet/vott:	12	T	electromagnet>V	ومطلما	13
		†			
Overflow quantity at	overflow valve	†	Del. quantity o		
		+			(59.367.3)
1st speed 1/min:		+	8th speed 1/		
Charge press. hPa:	1000	+	Charge press.	hPa:	_
Shutoff		+	Shutoff		
electromagnet>Volt:	12	+	electromagnet>V	olt:	12
	55.60100.00	1	Del. quantity c		
quantity> cm3/10s:		1			(34.641.0)
2nd speed 1/min:		1	, , ,	00	(34.01.141.0)
		T			
Charge press. hPa:	1000	Ť			
Shutoff	40	†			
electromagnet>Volt:		†	Electr. shutoff	:	
	83.40166.80	+			
quantity> cm3/10s:	(68.40181.80)	+	1st speed 1/	min: 3	350
		+	Charge press.	hPa: -	-
Delivery-quant. and	breakaway char.:	+	Del. quantity c		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1		Os.: -	
		1	Shutoff		
1st speed 1/min:	മറ	1	electromagnet>v	alt.	_
TOU SUCCU [/IIII].		1	CLUCK OMAGINETY	~	

Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.5...13.5 > 1000S.: (6,5...16.5) cm3/: 4.0 Dispersion 1000s.: (4.0) 1/min: 500 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.0...3.0 1000s.: -Part-load del.at 3rd inj.-qty. stop (EGR set) mm: 12.0 Spacing 1/min: 1000 1st speed Charge press. hPa: 1000 Shutotf electromagnet>Volt: 12 Del. quantity cm3/: 38.0...40.0 1000s.: (36.0...42.0) Automatic starting fuel delivery: 1/min: 200 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 95.0...140.0 1000s.: VH ---> VL 1/min: 350 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.0...70.0 > 1000s.: VH -> VL 1/min: 100 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 90.5...105.5 1000s.: VH ---> VL 1/min: 100 4th speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 37.5...52.5 1000s .: VH -LL Shutoff electromagnet: Cut-in >min voltage : 10.0

Mounting and assembly dimensions: Designation mm: 3,2...3,4 KF mm: 8,2...8,6 MS1 mm: 1,45 LDA stroke mm: 6.4 mm: GST 76.9 ALDA stroke mm: 42.3...46.3 Ya Yb mm: 50.0...61.0 Potentiometer adjustment: Supply voltage pot. > volt: 5.0 Output volt volt: 3.1 pot. > Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Rated voltage : 12.0

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BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ROVER Edition : 14.08.96 replaces Calibrating oil : ISO-4113 : VE4/11F2250L619-1 Injection pump Type number : 0 460 414 143 Customer Part-No. : Customer-specific information Customer : ROVER : 2.01 TCIE-M Engine 1/min: 72 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Electronically> : -Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 116 assembly> Openina bar: 204.00...210.00 Pressure> Perforated-plate mm: 0.5 diameter> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450 Start of delivery mm: -Prestroke (from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1000

Charge press. hPa: 1500

Setting value mm: 7.2...7.6

Shutoff electromagnet>Volt: 12 Supply-pump pressure Speed 1/min: 1000 Charge press hPa: 1500 Setting value bar: 6.7...7.3 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1250 Speed Charge press. hPa: 1500 Del. quantity cm3/ 1000s.: 59.5...60.5 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Dispersion cm3/: 3.01000s.: (4.0) Full-load del. w/out charge press.: 1/min: 700 Speed Del. quantity cm3/ 1000s.: 42.0...43.0 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 375 Speed Del. quantity cm3/ 1000s.: 4.0...8.0 > Timing valve Volt: -Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 4.0 1000s.: (4.5) Full-load speed regulation 1/min: 2580 Charge press hPa: 1500 Del. quantity cm3/ 1000s.: 18.0...22.0 Timing valve Volt: -Shutoff electromagnet>Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 87.5..104.5 VL 1000s.: 87.5 mind>

Timing valve Volt: -

Timing valve Volt: -	+
Shutoff	+ Overflow quantity at overflow valve
electromagnet>Volt: 12	+
	+ 1st speed 1/min: 700
Inspection-pump test specifications	+ Charge press. hPa: 1500
Test specifications in parentheses	+ Timing valve Volt: -
	+ Shutoff
Timing-device characteristic:	+ electromagnet>Volt: 12
	+ Overflow : 55.60100.00
1st speed 1/min: 800	+ quantity> cm3/10s: (40.60115.00)
Charge press hPa: 1500	+ 2nd speed 1/min: 2000
TD travel mm: 6.27.0	+ Charge press. hPa: 1500
> mm; (5.77.5)	+ Timing valve Volt: -
Timing valve Volt: -	→ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
2nd speed 1/min: 1000	+ Overflow : 83.40166.80
Charge press hPa: 1500	+ quantity> cm3/10s: (68.40181.80)
TD travel mm: 7.27.6	+
TD travel mm: 7.27.6 > mm: (6.68.2)	+ Delivery-quant. and breakaway char.:
Timing valve Volt: -	+
Shutoff	+
electromagnet>Volt: 12	+ 1st speed 1/min: 700
3rd speed 1/min: 1400	+ Charge-air pressure-setting
Charge press hPa: 1500	+ point> hPa: 500
TD travel mm; 8.39.0	+ LDA-stroke mm: 5.0
> mm: (7.89.6)	+ Timing valve Volt: -
Timing valve Volt: -	+ Shutoff
Shutoff	+ electromagnet>Volt: 12
electromagnet>Volt: 12	Del. quantity cm3/: 53,554,5
4th speed 1/min: 2000	+ > 1000s.: (50.857.2)
Charge press hPa: 1500	+ 2nd speed 1/min: 2670
TD travel mm: 0.00.6	+ Charge press. hPa: 1500
> mm: -	+ Timing valve Volt: -
Timing valve Volt: 12	+ Shutoff
Shutoff	electromagnet Volt: 12
electromagnet>Volt: 12	Del. quantity cm3/: 0.03.0
etectionagnet/vott. 12	1000s.: -
Supply-pump pressure characteristic:	3rd speed 1/min: 2580
supply-pullip pressure characteristic.	Charge press. hPa: 1500
1st speed 1/min: 800	+ Timing valve Volt: -
· · · · · · · · · · · · · · · · · · ·	Shutoff
Charge press. hPa: 1500 Supply-pump	electromagnet>Volt: 12
pressure> bar: 6.47.0	Del. quantity cm3/: 18.022.0
Timing valve Volt: -	1000s.: (15.025.0)
Shutoff	4th speed 1/min: 2450
	Charge press. hPa: 1500
electromagnet>Volt: 12 2nd speed 1/min: 1000	Timing valve Volt: -
	+ Shutoff
9 ,	electromagnet>Volt: 12
Supply-pump pressure> bar: 6.77.3	Del. quantity cm3/: 42.050.0
pressure> bar: 6.77.3	> 1000s.: (40.052.0)
Timing valve Volt: -	
Shutoff	+ 5th speed 1/min: 2000 + Charge press. hPa: 1500
electromagnet>Volt: 12	
3rd speed 1/min: 1400	Timing valve Volt: -
Charge press. hPa: 1500	+ Shutoff
Supply-pump	+ electromagnet>Volt: 12
pressure> bar: 7.27.8	+ Del. quantity cm3/: 58.062.0 + > 1000s.: (66.863.2)
Timing valve Volt: -	
Shutoff	6th speed 1/min: 1250
electromagnet>Volt: 12	+ Charge press. hPa: 1500

7th speed 1/min: Charge press. hPa: Timing valve Volt: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000S.: 8th speed 1/min: Charge press. hPa: Timing valve Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	12 59.560.5 (67.262.8) 1000 1500 - 12 60.565.5 (59.067.0) 700 -	++++++++++++++++++	Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 15.065.0 > 1000S.: VH> VL 3rd speed 1/min: 100 Timing valve Volt: - Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 88.5104.5 > 1000S.: VH> VL 4th speed 1/min: 100 Timing valve Volt: - Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 42.557.5 > 1000S.: VH Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 42.557.5 > 1000S.: VH Shutoff electromagnet:
		+	Cut-in
Electr. shutoff:		1	>min voltage : 10.0 Rated voltage : 12.0
1st speed 1/min:		+	•
Charge press. hPa:		+	Mounting and assembly dimensions:
Del. quantity cm3/: > 1000s.:	0.00,3.00	†	iverianation
Shutoff	_	I	vesignation K mm: -
electromagnet>volt:	_	1	KF mm: -
Timing valve Volt:		+	MS mm: -
J		+	MS1 mm: -
Idle delivery:		+	SVS max. mm: -
	775	+	LDA stroke mm: 5.0
1st speed 1/min:		†	Ya mm: 35.839.8 Yb mm: 48.157.9
Timing valve Volt: Shutoff	_	I	10 ////////////////////////////////////
electromagnet>Volt:	12	1	Remarks:
Del. quantity cm3/:		+	:
> 1000s.:	(2.010.0)	+	:
Dispersion cm3/:		+	Ya = Distance between VE flange and
> 1000s.:		+	speed-control lever in idle
2nd speed 1/min:		†	position
Timing valve Volt: Shutoff	_	I	Measurement point = edge of control lever on drive end
electromagnet>Volt:	12	1	tever on an ive ena
Del. quantity cm3/:		+	
> 1000s.:		+	Yb = Distance between VE flange and
	1	+	speed-control lever in rated speed
Automatic starting f	uet detivery:	İ	<pre>position Measurement point = edge of control</pre>
1st speed 1/min:	180	I	lever on distributor-head end
Timing valve Volt:		I	cover on a set indeot tiedd eild
Shutoff		1	
electromagnet>Volt:		+	
Del. quantity cm3/: 3	85.0135.0	+	
> 1000s.: '	VH> VL	+	
O. d	720	†	
2nd speed 1/min: 3		İ	
Timing valve Volt:		Γ	

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : MAX Edition : 28.05.96 replaces Calibrating oil : ISO-4113 : VE4/11F2000R687 Injection pump Type number : 0 460 414 144 Customer Part-No. : Customer-specific information Customer : MAXION : FORD DELTA Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 116 assembly> Opening Pressure> bar: 204.00...210.00 Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery Prestroke mm: -> (from BDC): -Start of delivery block Piston stroke mm: 1.54 Outlet > Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1600

Charge press. hPa: 1200 Setting value mm: 3.10...3.30 Shutoff electromagnet>Volt: 12 Supply-pump pressure Speed 1/min: 1600 Charge press hPa: 1200 Setting value bar: 7.30...7.90 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1150 Speed Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 66.5...67.5 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 3.0 1000s.: (4.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 48.5...49.5 Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 380 Speed Del. quantity cm3/ 1000s.: 8.5...12.5 > Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 4.0 1000s.: (5.0) > Full-load speed regulation 1/min: 2150 Speed Charge press hPa: 1200 Del. quantity cm3/ 1000s.: 47.0...51.0 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 61.0...111.0 1000s.: 61.0 mind> Shutoff electromagnet>Volt: 12 Inspection-pump test specifications

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Speed

Test specifications in parentheses	<u>†</u>	<pre>electromagnet>Volt: Overflow :</pre>	12
Timing-device characteristic:	+	quantity> cm3/10s:	
1st speed 1/min: 1300	I	Delivery-quant. and	hreakaway char ·
Charge press hPa: 1200	1	beervery quarter and	breakaway char
TD travel mm: 0.801.40	1		
> mm: (0.501.70)	1	1st speed 1/min:	700
electromagnet>Volt: 12	1	Charge-air pressure	
2nd speed 1/min: 1600	1	point> hPa:	
Charge press hPa: 1200	1	Shutoff	000
TD travel mm: 3.103.30	1	electromagnet>Volt:	12
TD travel mm: 3.103.30 mm: (2.703.70)	1	Del. quantity cm3/:	
Shutoff	1		(63.569.5)
electromagnet>Volt: 12	1	2nd speed 1/min:	
3rd speed 1/min: 1900	1	Charge press. hPa:	
Charge press hPa: 1200	1	Shutoff	1200
TD travel mm: 4.605.20	1	electromagnet Volt:	12
TD travel mm: 4.605.20 mm: (4.305.50)	1	Del. quantity cm3/:	ת חח ז חח
Shutoff	Ι	> 1000s.:	-
electromagnet>Volt: 12	I	3rd speed 1/min:	
etectromagnet/vott. 12	Ţ	Charge press. hPa:	
Supply-pump pressure characteristic:	T	Shutoff	1200
supply-pump pressure characteristic.	T	electromagnet>Volt:	10
1st speed 1/min: 600	T	Del. quantity cm3/:	
	T	> quantity (ms/:	(21.033.0)
Charge press. hPa: 1200	T	4th speed 1/min:	2150
Supply-pump	†		
pressure> bar: 3.904.50	†	Charge press. hPa:	1200
Shutoff	+	Shutoff	40
electromagnet>Volt: 12	†	electromagnet>Volt:	12 00 54 00
2nd speed 1/min: 1300	+	Del. quantity cm3/:	
Charge press. hPa: 1200	+		(44.0054.00)
Supply-pump	+	5th speed 1/min:	
pressure> bar: 6.407.00	+	Charge press. hPa:	1200
Shutoff	†	Shutoff	40
electromagnet>Volt: 12	†	electromagnet>Volt:	
3rd speed 1/min: 1600	†	Del. quantity cm3/:	
Charge press. hPa: 1200	+		(65.571.5)
Supply-pump	+	6th speed 1/min:	
pressure> bar: 7.307.90	†	Charge press. hPa:	1200
Shutoff	†	Shutoff	40
electromagnet>Volt: 12	†	electromagnet>Volt:	
4th speed 1/min: 1900	+	Del. quantity cm3/:	
Charge press. hPa: 1200	†		(64.569.5)
Supply-pump	+	7th speed 1/min:	
pressure> bar: 8.308.90	+	Charge press. hPa:	7200
Shutoff	†	Shutoff	40
electromagnet>Volt: 12	†	electromagnet>Volt:	
A Clarent Manager Control of the Con	†	Del. quantity cm3/:	
Overflow quantity at overflow valve	†		(66.074.0)
4	†	8th speed 1/min:	
1st speed 1/min: 500	†	Charge press. hPa:	_
Charge press. hPa: 1200	†	Shutoff	10
Shutoff	†	electromagnet>Volt:	
electromagnet>Volt: 12	†	Del. quantity cm3/:	
Overflow : 88.80133.30	†	> 1000s.:	(46.052.0)
quantity> cm3/10s: (73.80148.30)	†		
2nd speed 1/min: 1950	†		
Charge press. hPa: 1200	†	5)	
Shutoff	+	Electr. shutoff:	

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1/min: 350 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 380 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.5...12.5 1000s.: (5.5...15.5) cm3/: 4.0 Dispersion 1000s.: (5.0) 1/min: 340 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 22.5...30.5 1000s.: (19.5...33.5) 1/min: 450 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1/min: 350 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 34.00...74.00 1000s.: -2nd speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.00...80.00 1000s.: -Shutoff electromagnet: Cut-in : 10.0 >min voltage Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 2.7...2.9 K KF mm: KOT mm: 1.3...1.6 mm: 39.0...43.0 MS1 Ya Yb mm: 56.5...66.5 Remarks: : Ya = Distance between VE flange and

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speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test sheet : FOR Edition : 14.08.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F2000R624-5 Type number : 0 460 414 151

Customer Part-No. :

Customer-specific information

Customer : FC

Engine : 2.5L DI SWISS

Speed 1/min: 51

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 114

Opening |

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0,4

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Start of delivery block Piston stroke mm: 0,52

> mm: +-0,02(0,06)

Outlet > : B

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 2,60...2,80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 7,10...7.70

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 500 Del. quantity cm3/

> 1000s.: 28,3...28,7 F

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 9,50...11,50

Shutoff

Full-load speed regulation

Speed 1/min: 2200

Del. quantity cm3/

> 1000s.: 25.00...27,00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 10008:: (4.0)

Start:

Speed 1/min: 100

Del. quantity cm3/: 25.00...65.00

mind> 1000s.: 25.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

> mm: (0,6,...2,4)

electromagnet>Volt: 12 2nd speed 1/min: 1250

	2,602.80	+	Shutoff	
> mm:	(2,103,30)	+	electromagnet>Volt:	12
Shutoff	·	1	Del. quantity cm3/:	25.027.0
electromagnet>Volt:	12	1	> 1000s.:	(21,031,0)
3rd speed 1/min:		1	5th speed 1/min:	
		T		1900
	6,006,80	†	Shutoff	
> mm:	(5,507,30)	+	electromagnet>Volt:	12
Shutoff		+	Del. quantity cm3/:	40.342.7 D
electromagnet>Volt:	12	1	> 10005	(39.544.0) [
occorr singgifter voter	, ,	1	6th speed 1/min:	
Complex more processing		T		1700
Supply-pump pressur	e characteristic:	†	Shutoff	40
		+	electromagnet>Volt:	
1st speed 1/min:	500	+	Del. quantity cm3/:	39.842.2
Supply-pump		+	> 1000s.:	(38.543.5)
	5.406,00	1	7th speed 1/min:	
	3.400,00	T		1130
Shutoff	42	T	Shutoff	10
electromagnet>Volt:		+	electromagnet>Volt:	
2nd speed 1/min:	1150	+	Del. quantity cm3/:	35.536.5 E
Supply-pump		+	> 1000s.:	(33.538.5)
	6.907.50	1	8th speed 1/min:	
•	0.707.50	1		300
Shutoff	10	Ť	Shutoff	40
electromagnet>Volt:		+	electromagnet>Volt:	
3rd speed 1/min:	1250	+	Del. quantity cm3/:	
Supply-pump		+	> 1000s.:	(25.531.5)
	7.107.70	1		
•	7.10.1110	-		
Shutoff	13	Ţ		
electromagnet>Volt:		†		
4th speed 1/min:	2000	+	Electr. shutoff:	
Supply-pump		+		
pressure> bar:	8.709.30	1	1st speed 1/min:	425
Shutoff	33	1	Del. quantity cm3/:	
	43	T		
electromagnet>Volt:	12	†		(0.003.00)
		+	Shutoff	
Overflow quantity a	t overflow valve	+	electromagnet>volt:	_
		1	•	
1st speed 1/min:	500	1	Idle delivery:	
· · · · · · · · · · · · · · · · · · ·	300	1	tate activery.	
Shutoff	40	Ť	4	105
electromagnet>Volt:		+	1st speed 1/min:	425
	97.30141.70	+	Shutoff	
quantity> cm3/10s:	(82.30156.70)	+	electromagnet>Volt:	12
2nd speed 1/min:	1950	1	Del. quantity cm3/:	95 115
Shutoff	1730	1		(6.514.5)
	43	T		
electromagnet>Volt:		†	Dispersion cm3/:	
	115.30184.80	+	> 1000s.:	(4.0)
quantity> cm3/10s:	(100.30199.80)	+	2nd speed 1/min:	500
4		1	Shutoff	
Delivery-quant. and	hnestausy chan .	1	electromagnet>Volt:	12
betivery quant. and	Dieakaway Chai	T		
		†	Del. quantity cm3/:	
		+	> 1000s.:	(0.006.00)
2nd speed 1/min:	2400	+		
Shutoff		+	Part-load del.at 3rd	d ini. -at y.
electromagnet Volt:	12	1		,
		T	oton (CCD cot)	
Del. quantity cm3/:		T	stop (EGR set)	
> 1000s.:		+		
3rd speed 1/min:	2300	+		
Shutoff		+	Spacing mm:	20,0
electromagnet>Volt:	12	1		• -
		1	1st speed 1/min:	1250
Del. quantity cm3/:	7,0,,,12,0	T	•	(230
	(6.018.0)	†	Shutoff	
4th sneed 1/min:	2200	+	electromagnet>Volt:	12

```
Del. quantity cm3/: 22.0...23.0
             1000s.: (20,0...25.0)
Automatic starting fuel delivery:
              1/min: 300
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 33.0...63.0
> 1000s.: -
2nd speed
              1/min: 480
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.0...32.0
             1000s.: -
              1/min: 100
4th speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 25.0...65.0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                    : 10,0
                    : 12,0
Rated voltage
Mounting and assembly dimensions:
Designation
                  mm: 2.7...2.9
K
KF
                  mm: 8,2...8,6
                 mm: 1,6,,,2,0
MS
HBA stroke
                  mm: 7,2
Ya
                  mm: 41.0...44.0
                  mm: 63.0...75.0
Yb
Remarks:
F = Adjustment point for low full-load
delivery
E = Fuel-delivery adjustment point in
HBA range. (Correction by way of HBA
adjusting screw).
D = Adjustment point for high full-
load delivery
```

Note inst. in remarks column

Test sheet : FOR

Edition : 14.08.96

replaces

Calibrating oil : ISO-4113

: VE4/11F2000R624-6 Injection pump

: 0 460 414 152 Type number

Customer Part-No. :

Customer-specific information

Customer

: FORD

Engine

: 2.51 DI

Speed

1/min: 56

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 114 assembly>

Opening

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0,4

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

mm: 450

x Length>

Start of delivery

Prestroke mm: -

(from BDC): -

Start of delivery block

Piston stroke mm: 0,52

mm: +-0.02(0.06)

Outlet >

Injection-pump setting values

Test specifications in parentheses

Timing-device travel

1/min: 1250

Setting value mm: 2,60...2,80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1250

Setting value bar: 6.90...7.50

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 25,3...25,7 F

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 425 Speed

Del. quantity cm3/

1000s.: 8.0...10.0 >

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0

1000s.: (4.0)

Full-load speed regulation

1/min: 2200 Speed

Del. quantity cm3/

1000s.: 22.00...24,00 >

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0

1000s.: (4.0)

Start:

Speed 1/min: 100 Del. quantity cm3/: 25.00...65.00

1000s.: 25.00 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000

mm: 1,3...2.1 TD travel

mm: (0,8...2,6)

electromagnet>Volt: 12

2nd speed 1/min: 1250

TD travel mm:	2,602.80	+	Shutoff	
> mm:	(2,103,30)	+	electromagnet>Volt:	12
Shutoff	•	1	Del. quantity cm3/:	
electromagnet>Volt:	12	1		(23.535,5)
3rd speed 1/min:		1	5th speed 1/min:	
	5.105.90	1	Shutoff	1730
		T		42
	(4.606.40)	Ť	electromagnet>Volt:	
Shutoff	40	†	Del. quantity cm3/:	35,838,2 0
electromagnet>Volt:	12	+		(34.539.5) D
		+	6th speed 1/min:	1700
Supply-pump pressur	e characteristic:	+	Shutoff	
		+	electromagnet>Volt:	12
1st speed 1/min:	500	+	Del. quantity cm3/:	
Supply-pump		1		(35.540.5)
	5.205.80	1	7th speed 1/min:	
Shutoff	3.201113100	1	Shutoff	1000
electromagnet>Volt:	12	Ι	electromagnet>Volt:	12
		T		
2nd speed 1/min:	1000	Ť	Del. quantity cm3/:	
Supply-pump		†		(31.536.5) E
	6.407.00	+	8th speed 1/min:	500
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>Volt:	
3rd speed 1/min:	1250	+	Del. quantity cm3/:	
Supply-pump		+	> 1000s.:	(22.528.5)
pressure> bar:	6.907.50	1		
Shutoff		1		
electromagnet>Volt:	12	1		
4th speed 1/min:	วันกา	1	Electr. shutoff:	
	2000	T	Etectr. Silutori.	
Supply-pump	9 (0 0 20	Ť	1st speed 1/min.	/25
	8.609.20	T	1st speed 1/min:	
Shutoff		+	Del. quantity cm3/:	
electromagnet>Volt:	12	+		(0.003.00)
		+	Shutoff	
Overflow quantity a	t overflow valve	+	electromagnet>volt:	_
		+		
1st speed 1/min:	500	+	Idle delivery:	
Shutoff		+		
electromagnet>Volt:	12	+	1st speed 1/min:	425
	97.30141.70	+	Shutoff	
quantity> cm3/10s:	(82.30156.70)	1	electromagnet>Volt:	12
2nd speed 1/min:	1950	1	Del. quantity cm3/:	
Shutoff	1730	I		(5.013.0)
	12	Ι	Dispersion cm3/:	
electromagnet>Volt:	115.30184.80	T		
		Ť		
quantity> cm3/10s:	(100.30199.80)	†	2nd speed 1/min:	500
		+	Shutoff	
Delivery-quant. and	breakaway char.:	+	electromagnet>Volt:	
		+	Del. quantity cm3/:	
		+	> 1000s.:	(0.006.00)
2nd speed 1/min:	2400	+		
Shutoff		+	Part-load del.at 3rd	iniaty.
electromagnet Volt:	12	+		· # 1777
Del. quantity cm3/:		1	stop (EGR set)	
> 1000s.:		1		
		1		
•	2200	T	Spacing	20 O
Shutoff	42	T	Spacing mm:	20,0
electromagnet>Volt:	16	†	4-4 4/ *	4250
Del. quantity cm3/:	22.024.0	†	1st speed 1/min:	1200
	(18.028.0)	+	Shutoff	
4th speed 1/min:	2140	+	electromagnet>Volt:	12

```
Del. quantity cm3/: 20.8...21.8
             1000s.: (18.8...23.8)
Automatic starting fuel delivery:
              1/min: 300
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 33.0...63.0
             1000s .: -
2nd speed
              1/min: 480
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.0...32.0
> 1000s.: -
              1/min: 100
4th speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 25.0...65.0
             1000s.: -
Shutoff electromagnet:
Cut-in
                    : 10,0
>min voltage
Rated voltage
                    : 12,0
Mounting and assembly dimensions:
Designation
                 mm: 2.7...2.9
K
KF
                 mm: 8,2...8,6
                 mm: 1,6,,,2,0
mm: 7,7
mm: 41.0...44.0
MS
HBA stroke
Ya
Yb
                 mm: 63.0...75.0
Remarks:
F = Adjustment point for low full-load
delivery
E = Fuel-delivery adjustment point in
HBA range. (Correction by way of HBA
adjusting screw).
D = Adjustment point for high full-
load delivery
```

Note inst. in remarks column

Test sheet : FOR : 14.08.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/11F2000R624-7 Type number : 0 460 414 153

Customer Part-No. :

Customer-specific information

Customer : FORD

Engine : 2.5L DI

Speed 1/min: 51

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 114

Opening

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0,4

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Start of delivery block Piston stroke mm: 0,52

> mm: +-0,02(0,06)

Outlet > : B

Injection-pump setting values Test specifications in parentheses Timing-device travel

Speed 1/min: 1250

Setting value mm: 2,60...2,80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 7,10...7.70

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

> 1000s.: 28,3...28,7 F

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 9,50...11,50

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 > 10008:: (5.0)

Full-load speed regulation

Speed 1/min: 2200

Del. quantity cm3/

> 1000s.: 25.00...27,00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 10008:: (4.0)

Start:

Speed 1/min: 100

Del. quantity cm3/: 25.00...65.00

mind> 1000s.: 25.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000

TD travel mm: 1,1...1,9 mm: (0,6...2,4)

electromagnet>Volt: 12

2nd speed 1/min: 1250

	2,602.80	+ Shutoff
> mm:	(2,103,30)	+ electromagnet>Volt: 12
Shutoff		+ Del. quantity cm3/: 25.027.0
electromagnet>Volt:	12	+ > 1000s.: (21,031,0)
3rd speed 1/min:		+ 5th speed 1/min: 1950
	6,006,80	+ Shutoff
	(5,507,30)	+ electromagnet>Volt: 12
	(3/30/,30/	
Shutoff	40	+ Del. quantity cm3/: 40.342.7 D
electromagnet>Volt:	12	+ > 1000s.: (39.544.0)
		+ 6th speed 1/min: 1700
Supply-pump pressur	e characteristic:	+ Shutoff
		<pre>+ electromagnet>Volt: 12</pre>
1st speed 1/min:	500	+ Del. quantity cm3/: 39.842.2
Supply-pump		+ > 1000s.: (38.543.5)
	5.406,00	
	2.406,00	
Shutoff	45	+ Shutoff
electromagnet>Volt:		+ electromagnet>Volt: 12
2nd speed 1/min:	1150	+ Del. quantity cm3/: 35.536.5 E
Supply-pump		+ > 1000s.: (33.538.5)
pressure> bar:	6.907.50	+ 8th speed 1/min: 500
Shutoff		+ Shutoff
electromagnet>Volt:	12	+ electromagnet>Volt: 12
3rd speed 1/min:		+ Del. quantity cm3/: 28.328.7
Supply-pump	1250	+ > 1000s.: (25.531.5)
20bbry_brub	7 40 7 70	7 / 10008.: (25.531.3)
	7.107.70	†
Shutoff		†
electromagnet>Volt:		†
4th speed 1/min:	2000	+ Electr. shutoff:
Supply-pump		+
pressure> bar:	8.709.30	+ 1st speed 1/min: 425
Shutoff		+ Del. quantity cm3/: 0.003.00
electromagnet>Volt:	12	+ > 1000s.: (0.003.00)
e teet onagne ex voet.	16	Shutoff
Overfley aventity o	t systiau valva	
Overflow quantity a	t overitom varve	+ electromagnet>volt: -
		,
A		+
1st speed 1/min:		Idle delivery:
Shutoff	500	Idle delivery:
Shutoff electromagnet>Volt:	500 12	Idle delivery: 1st speed 1/min: 425
Shutoff electromagnet>Volt:	500	Idle delivery:
Shutoff electromagnet>Volt: Overflow:	500 12 97.30141.70	Idle delivery: 1st speed 1/min: 425 Shutoff
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s:	500 12 97.30141.70 (82.30156.70)	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed: 1/min:	500 12 97.30141.70 (82.30156.70)	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff	500 12 97.30141.70 (82.30156.70) 1950	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5)
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt:	500 12 97.30141.70 (82.30156.70) 1950	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0)
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80)	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80)	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80)	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80)	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: Delivery-quant. and	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.:	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000S.: (6.514.5) Dispersion cm3/: 3.0 > 1000S.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.:	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00)
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00) Part-load del.at 3rd injqty.
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00)
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: > 1000s.:	12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00) Part-load del.at 3rd injqty.
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: > 1000s.: 3rd speed 1/min:	12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00) Part-load del.at 3rd injqty. stop (EGR set)
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: > 1000s.: 3rd speed 1/min: Shutoff	12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0 — 2300	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00) Part-load del.at 3rd injqty.
Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow: quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: > 1000s.: 3rd speed 1/min:	12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0 — 2300	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 >
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: > 1000s.: 3rd speed 1/min: Shutoff electromagnet>Volt:	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0 - 2300	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00) Part-load del.at 3rd injqty. stop (EGR set)
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: > 1000s.: 3rd speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/: Delivery-quant.	500 12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0 - 2300	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 >
Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: 2nd speed 1/min: Shutoff electromagnet>Volt: Overflow : quantity> cm3/10s: Delivery-quant. and 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: > 1000s.: 3rd speed 1/min: Shutoff electromagnet>Volt: Del. quantity cm3/: Delivery-quant.	12 97.30141.70 (82.30156.70) 1950 12 115.30184.80 (100.30199.80) breakaway char.: 2400 12 0,05.0 - 2300 12 9.015.0 (6.018.0)	Idle delivery: 1st speed 1/min: 425 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 9.511.5 > 1000s.: (6.514.5) Dispersion cm3/: 3.0 > 1000s.: (4.0) 2nd speed 1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.006.00 > 1000s.: (0.006.00) Part-load del.at 3rd injqty. stop (EGR set) Spacing mm: 20,0 1st speed 1/min: 1250

```
Del. quantity cm3/: 22.0...23.0
             1000s.: (20,0...25.0)
Automatic starting fuel delivery:
              1/min: 300
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 33.0...63.0
             1000s.: -
              1/min: 480
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.0...32.0
             1000s .: -
              1/min: 100
4th speed
Shutoff
electromagnet>Volt: 12
Del. quantity_cm3/: 25.0...65.0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10,0
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
                 mm: 2.7...2.9
K
KF
                 mm: 8,2...8,6
                 mm: 1,6,,,2,0
MS
                 mm: 7,2
mm: 41.0...44.0
HBA stroke
Ya
                 mm: 63.0...75.0
Yb
Remarks:
F = Adjustment point for low full-load
delivery
E = Fuel-delivery adjustment point in
HBA range. (Correction by way of HBA
adjusting screw).
D = Adjustment point for high full-
load delivery
```

Note inst. in remarks column

Test sheet Edition : 14.08.96

replaces

: ISO-4113 Calibrating oil

Injection pump : VE6/11F1800L363-1

Type number : 0 460 416 081

Customer Part-No. :

Customer-specific information

Customer : VM

: 638 BLTK Engine

Speed 1/min: 107

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly>

Openina .

bar: 144.00...150.00 Pressure>

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 0,3

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Charge press. hPa: 1000 mm: 3.5...3.9 Setting value

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

1/min: 1500 Speed Charge press hPa: 1000 Setting value bar: 6.6...7.2

electromagnet>Volt: 24

Full-load del. with charge press.:

1/min: 1500 Speed Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 58.5...59.5 >

Shutoff

electromagnet>Volt: 24 Dispersion cm3/: 3.5 1000s.: (3.5)

Full-load del. w/out charge press.:

1/min: 600 Speed

Del. quantity cm3/

1000s.: 43.5...44.5 >

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/

> 1000s.: 10.0...14.0

Shutoff

electromagnet>Volt: 24 Del. quantity cm3/: 3.5 1000s.: (3.5)

Full-load speed regulation

1/min: 1950 Speed Charge press hPa: 1000

Del. quantity cm3/

1000s.: 36.0...42.0

Shutoff

electromagnet>Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 55.0...95.0

mind> 1000s.: 55.0

Shutoff

electromagnet>Volt: 24

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1500 Speed Charge press hPa: -Inj.-qty. cm3/

difference> 1000S.: -4.06.0 * Shutoff electromagnet>Volt: 24 SP pressdif.measurement	+ Shutoff + electromagnet>Volt: 24 + Overflow : 41.7086.1 + quantity> cm3/10s: (26.70101.1) + 2nd speed 1/min: 1800
1st speed 1/min: 1500 Charge press hPa: - Supply pump	Charge press. hPa: 1000 Shutoff electromagnet>Volt: 24
pressure> difference> bar: -0.10.3 *	0verflow : 55.6139.0 quantity> cm3/10s: (40.6154.0)
Inspection-pump test specifications Test specifications in parentheses	Delivery-quant. and breakaway char.:
Timing-device characteristic:	1st speed 1/min: 600 Charge-air pressure-setting
1st speed	+ point> hPa: 450
Charge press hPa: 1000	+ LDA-stroke mm: 7.1
	+ Shutoff
TD travel mm: 0.61.4	
	+ electromagnet>Volt: 24
electromagnet>Volt: 24	+ Del. quantity cm3/: 49.550.5
2nd speed 1/min: 1500	+ > 1000s.: (47.552.5)
Charge press hPa: 1000	+ 2nd speed 1/min: 2200
TD travel mm: 3.503.90	+ Charge press. hPa: 1000
> mm: (3.004.40)	+ Shutoff
Shutoff	+ electromagnet Volt: 24
electromagnet>Volt: 24	+ Del. quantity cm3/: 0.03.0
3rd speed 1/min: 1800	+ > 1000s.: -
Charge press hPa: 1000	+ 3rd speed 1/min: 2080
TD travel mm: 4.505.30	+ Charge press. hPa: 1000
> mm: (4.205.60)	+ Shutoff
Shutoff	+ electromagnet>Volt: 24
electromagnet>Volt: 24	+ Del. quantity cm3/: 0.010.00 + > 1000s.: -
Supply-pump pressure characteristic:	+ 4th speed 1/min: 2000 + Charge press. hPa: 1000
1st speed 1/min: 600	+ Shutoff
Charge press. hPa: 1000	+ electromagnet>Volt: 24.0
Supply-pump	+ Del. quantity cm3/: 18.038.0
pressure> bar: 3.54.1	+ > 1000s.: -
Shutoff	+ 5th speed 1/min: 1950
electromagnet>Volt: 24	+ Charge press. hPa: 1000
2nd speed 1/min: 1500	+ Shutoff
Charge press. hPa: 1000	+ electromagnet>Volt: 24
Supply-pump	+ Del. quantity cm3/: 36.042.0
pressure> bar: 6.67.2	+ > 1000s.: (35.043.0)
> bar: -	+ 6th speed 1/min: 1800
Shutoff	Charge press. hPa: 1000
electromagnet>Volt: 24	+ Shutoff
3rd speed	+ electromagnet>Volt: 24
Charge press. hPa: 1000	+ Del. quantity cm3/: 55.057.0
Supply-pump	+ > 1000s.: (54,059.0)
pressure> bar: 7.78.3	7th speed 1/min: 1500
Shutoff	Charge press. hPa: 1000
electromagnet>Volt: 24	Shutoff
CCCCC CHICKING F. FOCES ET	electromagnet>Volt: 24
Overflow quantity at overflow valve	Del. quantity cm3/: 58.559.5
Over I tow qualitately at over 1 tow valve	> 1000s.: (57.061.0)
1st speed 1/min: 600	
1st speed	
Charge press. hPa: 1000	+ Charge press. hPa: 1000

Shutoff +	Charge press. hPa: -
electromagnet>Volt: 24	Inj.—qty. cm3/: 2.08.0 ' Z
Del mindidu en 7/1 EE E EO E	1111. Tyly. (11157. 2.00.0 2
Del. quantity cm3/: 55.559.5	difference> 1000s.: -
> 1000s.: (54.061.0) +	Shutoff
9th speed 1/min: 600 +	electromagnet Volt: 24
Charge press. hPa: -	•
Shutoff	TD-travel dif.measurement:
electromagnet>Volt: 24	TO CHATCE ATTIMEDUAL CHICITE.
The bound is a series of the s	4
Del. quantity cm3/: 43.544.5	1st speed
> 1000s.: (41.546.5) +	Charge press. hPa: -
+	TD-travel : -1.51.7 #
+	difference> mm: -
Mech. shutoff:	Shutoff
1	electromagnet>Volt: 24
1st speed 1/min, 1000	
1st speed 1/min: 1800 +	2nd speed 1/min: 1500
Charge press. hPa: 1000	Charge press. hPa: -
Del. quantity cm3/: 0.003.00	TD-travel : -1.11.9 '
> 1000s.: - +	difference> mm: -
Shutoff	
electromagnet>volt: 24	Automatic starting fuel delivery:
ceeeer onagrices voter. E-	Automatic starting rule decivery.
The same about of the	4.4 1 4/- '- 700
Electr. shutoff: +	1st speed 1/min: 300
+	Shutoff
1st speed	electromagnet>Volt: 24
Charge press. hPa: -	Del. quantity cm3/: 55.075.0
Del. quantity cm3/: 0.003.00	> 1000s.: -
> 1000s.: -	1000011
Shutoff	2nd speed 1/min: 400
electromagnet>volt: - +	Shutoff
+	electromagnet>Volt: 24
Idle delivery:	Del. quantity cm3/: 37.057.0
<u> </u>	> 1000s.: -
1st speed	
Shutoff	4th speed 1/min: 100
· · · · · · · · · · · · · · · · · · ·	•
electromagnet>Volt: 24	Shutoff
Del. quantity cm3/: 10.014.0 +	electromagnet>Volt: 24
> 1000s.: (8.016.0) +	Del. quantity cm3/: 55.095.0
Dispersion cm3/: 3.5	
> 1000s.: (3.5)	Shutoff electromagnet:
2nd speed 1/min: 500	
Shutoff	Cut-in
electromagnet>Volt: 24	
Del. quantity cm3/: 4.59.5	Rated voltage : 24.0
> 1000s.: (2.511.5) +	
3rd speed	Mounting and assembly dimensions:
Shutoff	-
electromagnet>Volt: 24	Designation
Del. quantity cm3/: 0.03.0	K mm: -
> 1000s.: -	KF mm: 5.66.0
7	
	MS mm: 0.81.2
Load-dependent start of delivery: +	LDA stroke mm: 7.1
<pre>Injqty.dif.measurement: +</pre>	Ya mm: 38.640.6
+	Yb mm: 50.652.4
1st speed	
Charge press. hPa: -	Remarks:
Injqty. cm3/ : -13,520.5 #	· · · · · · · · · · · · · · · · · · ·
	•
difference> 1000s.: -	Vh Distance hatering UP floor
Shutoff +	Yb = Distance between VE flange and
electromagnet>Volt: 24	speed-control lever in rated speed
2nd sneed $1/\min$: 1500	position

Measurement point = edge of control lever on distributor-head end

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Z = Absolute delivery

Note inst. in remarks column

Test sheet : HER Edition : 09.08.96

replaces :-

Calibrating oil : ISO-4113

Injection pump : VE4/12F1300R314C Type number : 0 460 424 044

Customer Part-No. :

Customer—specific information Customer : HERCULES

Engine : D2300 NA

Power KW: 55 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating—oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Opening |

Pressure> bar: 250.00...253.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 0,3 > (from BDC): +-0,04(0,06)

Indicator setting
Piston stroke> mm: 1,0
Outlet> : A

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 900

Setting value mm: 1,3...1,7

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 900 Setting value bar: 4,1...4,7

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 900 Del. quantity cm3/

> 1000s.: 64,5...65,5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4,0 > 1000S.: (4,5)

Low-idle speed regulation

Speed 1/min: 250

Del. quantity cm3/

> 1000s.: 11,0...13.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 5,5 > 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1350

Del. quantity cm3/

> 1000s.: 49,50...55,50

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.00...110.0

mind> 1000s.: 60.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

electromagnet>Volt: 12 2nd speed 1/min: 900

TD travel mm: 1,30...1,70 mm: (0,80...2,20)

Shutoff

C20

<pre>electromagnet>Volt: 3rd speed 1/min:</pre>		+	> 1000s.: 6th speed 1/min:	(60,0066,00)
		T		. 1100
	2,803,60	†	Shutoff	• •
	(2,503,90)	+	electromagnet>Volt:	
Shutoff		+	Del. quantity cm3/:	: 63,066,0
electromagnet>Volt:	12	+		(61,068,0)
5 15 15 15 15 15 15 15 15 15 15 15 15 15		1	7th speed 1/min:	
Complete promise page con-		T	•	. 700
Supply-pump pressure	e characteristic:	†	Shutoff	4.0
		+	electromagnet>Volt:	
1st speed 1/min:	500	+	Del. quantity cm3/:	64,565,5
Supply-pump		1		(62,068,0)
	2,503,10	1	8th speed 1/min:	
	2,303,10	T	• • • • • • • • • • • • • • • • • • • •	300
Shutoff	4.0	†	Shutoff	4.0
electromagnet>Volt:		+	electromagnet>Volt:	
2nd speed 1/min:	900	+	Del. quantity cm3/:	64,5,72,5
Supply-pump		1	> 1000s.:	
pressure> bar:	/ 10 / 70	1	10000.	
	4, 104,70	T		
Shutoff		+		
electromagnet>Volt:	12	+	Mech. shutoff:	
3rd speed 1/min:		+		
Supply-pump		1	1st speed 1/min:	1300
and the point	5 (0 (30	T		
	5,606,20	†	Del. quantity cm3/:	0,003.00
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>volt:	12
•	· -	1	3	_
Overflow quantity at	t overflow valve	ſ	Electr. shutoff:	
over tow quantity at	L Over I tow valve	T	Etetti. Silutoii.	
		+		
1st speed 1/min:	500	+	1st speed 1/min:	250
Shutoff		1	Del. quantity cm3/:	
electromagnet>Volt:	10		> 10005	(0.003.00)
etectromagnet/vott:	14 70 07 10	T		(0.003.00)
	41.7083.40	+	Shutoff	
quantity> cm3/10s:	(26.7098.90)	+	electromagnet>volt:	-
2nd speed 1/min:	1300	1	_	
Shutoff	1000	1	Idle delivery:	
	12	T	rate detivery.	
electromagnet>Volt:	16	T		0.50
	55.60139.00	+	1st speed 1/min:	250
quantity> cm3/10s:	(40.60154.00)	+	Shutoff	
		+	electromagnet>Volt:	12
Delivery-quant. and	hreakaway chan ·	1	Del. quantity cm3/:	
vecivery qualit. and	Dieakaway Chai	T		
		Ť		(9 ₂ 0015.00)
		+	Dispersion cm3/:	5,5
1st speed 1/min:	1480	+	> 1000s.:	(7.0)
Shutoff		1	2nd speed 1/min:	450
electromagnet>Volt:	10	1	Shutoff	130
		T		13
Del. quantity cm3/:		†	electromagnet>Volt:	
> 1000s.:	-	+	Del. quantity cm3/:	0,003,00
2nd speed 1/min:	1430	+	> 1000s.:	_
Shutoff		Τ		
	10	}	Automobile obserbine	منتصل طمائي
electromagnet Volt:		Ť	Automatic starting	ruet detroery.
Del. quantity cm3/:		+		
> 1000s.:	-	+	1st speed 1/min:	250
3rd speed 1/min:	1350	1	Shutoff	
	.030	1	electromagnet>Volt:	10
Shutoff	42	T		
electromagnet>Volt:		t	Del. quantity cm3/:	
Del. quantity cm3/:	49,555,5	+	> 1000s.:	_
	(46,5058,5)	+		
5th speed 1/min:		1	2nd speed 1/min:	130
	.555	1	Shutoff	. 50
Shutoff	42	T		42
electromagnet>Volt:		t	electromagnet>Volt:	
Nel quentity cm3/*	K1 50 K4 50	+	Del quantity cm3/:	70 0 110 0

10005.: -

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 60.00...110,0
> 1000s.: -

Shutoff electromagnet:

Cut-in

>min voltage : 10,0 Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K mm: -

mm: 5,2...5,6 mm: 1,2...1,6 KF MS SVS max.

mm: 2,7 mm: 32,2...37,2 mm: 39,5...45,1 Ya Yb

Remarks:

: 4 030 536 09

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : SOF Edition : 09.08.96 replaces Calibrating oil : ISO-4113 : VE4/12F1800R689 Injection pump : 0 460 424 136 Type number Customer Part-No. : Customer-specific information Customer : IVECO-SOFIM : 8140,23,2585 Engine Power KW: 76 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly> Opening bar: 250.00...253.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1200

Charge press. hPa: 1200

Setting value mm: 1,00...1,20 electromagnet>Volt: 12 Supply-pump pressure Speed 1/min: 1200 Charge press hPa: 1200 Setting value bar: 6,90...7,50 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1100 Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 58.00...59.00 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 4,0 1000s.: (4,5) Full-load del. w/out charge press.: 1/min: 550 Del. quantity cm3/ 1000s.: 30,00...31,00 Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 375 Speed Del. quantity cm3/ 1000s.: 5,00...9,00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6,5) Full-load speed regulation Speed 1/min: 2000 Charge press hPa: 1200 Del. quantity cm3/ 1000s.: 40,00...46,00 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 60.0...110,0 mind> 1000s.: 60.0 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses

	+	Delivery-quant. and	breakaway char.:
Timing-device characteristic:	1		, , , , , , , , , , , , , , , , , , , ,
1st speed 1/min: 1200	+	1st speed 1/min:	800
Charge press hPa: 1200	+	Charge-air pressure	-setting
TD travel mm: 1,001,20	+	point> hPa:	
> mm: (0,401,80)	+	LDA-stroke mm:	4,8
electromagnet>Volt: 12,0	+	Shutoff	
2nd speed 1/min: 1500	+	electromagnet>Volt:	12
Charge press hPa: 1200	+	Del. quantity cm3/:	
TD travel mm: 2,903,50	+		(47,5054.50)
> mm: (2,503,90)	+	2nd speed 1/min:	
Shutoff	+	Charge press. hPa:	1200
electromagnet>Volt: 12	+	Shutoff	
3rd speed 1/min 1800	+	electromagnet Volt:	
Charge press hPa: 1200	+	Del. quantity cm3/:	
TD travel mm: 4,505,30	+	> 1000s.:	
> mm: (4,205,60)	+	3rd speed 1/min:	
Shutoff	+	Charge press. hPa:	1200
electromagnet>Volt: 12	+	Shutoff	4.0
	+	electromagnet>Volt:	
Supply-pump pressure characteristic:	+	Del. quantity cm3/:	
4 1 4 1 400	+	> 1000s.:	(13,027,0)
1st speed 1/min: 600	†	4th speed 1/min:	
Charge press. hPa: 1200	†	Charge press. hPa:	1200
Supply-pump	+	Shutoff	42.0
pressure> bar: 4,405,00	†	electromagnet>Volt:	
> bar: -	†	Del. quantity cm3/:	40,046,0
Shutoff	†		(38,547,5)
electromagnet>Volt: 12	†	5th speed 1/min:	
2nd speed 1/min: 1200	†	Charge press. hPa:	1200
Charge press. hPa: 1200	Ť	Shutoff	12.0
Supply-pump	T	electromagnet>Volt:	
pressure> bar: 6,907,50	T	Del. quantity cm3/: > 1000s.	(58,0065,00)
> bar: - Shutoff	T	6th speed 1/min:	
electromagnet>Volt: 12	Ι	Charge press. hPa:	
3rd speed 1/min: 1800	Ι	Shutoff	1200
Charge press. hPa: 1200	Ι	electromagnet>Volt:	12 0
Supply-pump	Ι	Del. quantity cm3/:	
pressure> bar: 9,09,6	Ι		(55,062,0)
> bar: -	1	7th speed 1/min:	
Shutoff	1	Charge press. hPa:	
electromagnet>Volt: 12	1	Shutoff	
otoot, omag. to the vector via	1	electromagnet>Volt:	12.0
Overflow quantity at overflow valve	1	Del. quantity cm3/:	
	+	8th speed 1/min:	
1st speed 1/min: 600	+	Charge press. hPa:	_
Charge press. hPa: 1200	+	Shutoff	
Shutoff	+	electromagnet>Volt:	12
electromagnet>Volt: 12	+	Del. quantity cm3/:	30,0031,00
Overflow : 111.1155.5	+		(27,0034.00)
quantity> cm3/10s: (96,1170,5)	+		
2nd speed 1/min: 1800	+		
Charge press. hPa: 1200	+		
Shutoff	+	Electr. shutoff:	
electromagnet>Volt: 12	+		
Overflow : 152.7208.30	+	1st speed 1/min:	
quantity> cm3/10s: (137,7223.30)	+	Del. quantity cm3/:	
	+	> 1000s.:	(0.003.00)

```
Shutoff
electromagnet>volt: -
Idle delivery:
              1/min: 375
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 5,0...9,0
             1000s.: (3.0...11.0)
>
                cm3/: 6,0
Dispersion
             1000s.: (6,5)
              1/min: 425
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0,00...3,00
             1000s.: -
              1/min: 275
3rd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 34,0...54,0
             1000s.: -
Automatic starting fuel delivery:
              1/min: 510
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.00...110,0
             1000s.: -
              1/min: 200
2nd speed
Shutoff
electromagnet>Volt: 12,0
Del. quantity cm3/: 75,0...105,0
             1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10,0
                   : 12,0
Rated voltage
Mounting and assembly dimensions:
Designation
                 mm: 3,5...3,7
K
KF
                 mm: -
                 mm: 1,3...1,6
MS1
                 mm: 4,8
LDA stroke
                 mm: KSB=10,0
XK
                 mm: 33,0...35,0
Ya
                 mm: 44,0...50,0
Yb
Remarks:
                   :
```

Note inst. in remarks column

Test sheet : SOF

Edition : 09.08.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R690 Type number : 0 460 424 137

Customer Part-No. :

Customer-specific information Customer : IVECO-SOFIM

Engine : 8140.43.2585

Power KW: 85

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating—oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Openina

Pressure> bar: 250.00...253.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1100 Charge press. hPa: 1200 Setting value mm: 1,50...1,70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1100 Charge press hPa: 1200

Setting value bar: 6,50...7,10

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1750 Charge press. hPa: 1200 Del. quantity cm3/

> 1000s.: 62.50...63,50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4,0 > 1000s.: (4,5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 33,50...34,50

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 5,00...9,00

Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 6.0
> 1000s.: (6,5)

Full-load speed regulation

Speed 1/min: 2000 Charge press hPa: 1200

Del. quantity cm3/

> 1000s.: 40,00...46,00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.0...110,0

mind> 1000s.: 60.0

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

+	- Shutoff
Timing-device characteristic:	electromagnet>Volt: 12
+	- Del. quantity cm3/: 53,5054,50
1st speed	- > 1000s.: (50,5057.50)
Charge press hPa: 1200	- 2nd speed 1/min: 2200
TD travel mm: 1,501,70	- Charge press. hPa: 1200
> mm: (0,902.30)	Shutoff
electromagnet>Volt: 12,0	- electromagnet Volt: 12,0
2nd speed 1/min: 1600	Del. quantity cm3/: 0.004.00
Charge press hPa: 1200	> 1000s.: -
TD travel mm: 3.704.30	- 3rd speed 1/min: 2100
> mm: (3.304,70)	Charge press. hPa: 1200
Shutoff	- Shutoff
electromagnet>Volt: 12	electromagnet>Volt: 12
3rd speed 1/min: 1400	- Del. quantity cm3/: 15,025,0 - > 1000s.: (13,027,0)
	- 4th speed 1/min: 2000
TD travel mm: 2,503,10 + mm: (2,103,50)	- Charge press. hPa: 1200
Shutoff	- Shutoff
electromagnet>Volt: 12	- electromagnet>Volt: 12,0
	- Del. quantity cm3/: 40,046,0
Supply-pump pressure characteristic:	- > 1000s.: (38,547,5)
+	- 5th speed 1/min: 1800
1st speed	- Charge press. hPa: 1200
Charge press. hPa: 1200	- Shutoff
Supply-pump +	- electromagnet>Volt: 12,0
pressure> bar: 4,905,50 +	- Del. quantity cm3/: 61,0065.00
> bar: - +	- > 1000s.: (59,5066,50)
Shutoff	- 6th speed 1/min: 1750
electromagnet>Volt: 12 +	- Charge press. hPa: 1200
2nd speed 1/min: 1100 +	- Shutoff
Charge press. hPa: 1200	electromagnet>Volt: 12,0
Supply-pump + 50 7 10	- Del. quantity cm3/: 62,563,5 - > 1000s.: (59,566,5)
pressure> bar: 6,507,10 + bar: -	- 7th speed 1/min: 600
Shutoff	- Charge press. hPa: 1200
electromagnet>Volt: 12	- Shutoff
teeter olingines vote. 12	electromagnet>Volt: 12,0
Overflow quantity at overflow valve	Del. quantity cm3/: 62.066.0
+	- 8th speed 1/min: 550
1st speed	- Charge press. hPa: -
Charge press. hPa: 1200	Shutoff
Shutoff	electromagnet>Volt: 12
electromagnet>Volt: 12	Del. quantity cm3/: 33.5034.50
Overflow : 75.0119.5	> 1000s.: (30.5037.50)
quantity> cm3/10s: (60,0134,5)	•
2nd speed 1/min: 1800 +	•
Charge press. hPa: 1200	
Shutoff	Electr. shutoff:
electromagnet>Volt: 12	1et apped 1/min 705
Overflow : 97,2180,5	1st speed 1/min: 325
quantity> cm3/10s: (82,2195.5)	Charge press. hPa: - Del. quantity cm3/: 0.003.00
Delivery-quant. and breakaway char.:	> 1000s.: (0.003.00)
- Colifer and Discurdady offer .	Shutoff
 	electromagnet>volt: -
1st speed	
Charge-air pressure-setting +	Idle delivery:
point> hPa: 500 +	
IDA-stroke mm· 7.0	1st speed 1/min: 375

```
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 5,0...9,0
             1000s.: (3.0...11.0)
               cm3/: 6,0
Dispersion
>
             1000s.: (6,5)
              1/min: 425
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0,00...3,00
             1000s.: -
3rd speed
              1/min: 275
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40,0...54,0
             1000s .: -
Automatic starting fuel delivery:
              1/min: 500
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.00...39,0
             1000s.: -
              1/min: 200
2nd speed
Shutoff
electromagnet>Volt: 12,0
Del. quantity cm3/: 78,0...108,0
             1000s.: -
Shutoff electromagnet:
Cut-in
                   : 10,0
>min voltage
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
                 mm: 3,5...3,7
K
KF
                 mm: -
MS1
                 mm: 1,4...1,7
                 mm: 7,0
LDA stroke
                 mm: KSB=5,7
XK
                 mm: 33,0...35,0
Ya
                 mm: 44,0...50,0
Yb
Remarks:
                   :
```

Note inst. in remarks column

Test sheet : SOF

Edition : 09.08.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R673 Type number : 0 460 424 139

Customer Part-No. :

Customer-specific information
Customer : IVECO-SOFIM

Engine : 8140.43.3780

Power KW: 85

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating—oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Openina

Pressure> bar: 250.00...253.00

Perforated-plate

diameter> mm: 0,5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1100 Charge press. hPa: 1200 Setting value mm: 1,50...1,70

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 1100 Charge press hPa: 1200

Setting value bar: 6,50...7,10

Shutoff

electromagnet>Volt: 24

Full-load del. with charge press.:

Speed 1/min: 1750 Charge press. hPa: 1200

Del. quantity cm3/

> 1000s.: 62.50...63,50

Shutoff

electromagnet>Volt: 24
Dispersion cm3/: 4,0
> 1000s.: (4,5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 33,50...34,50

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 5,00...9,00

Shutoff

electromagnet>Volt: 24
Del. quantity cm3/: 6.0
> 1000s.: (6,5)

Full-load speed regulation

Speed 1/min: 2000 Charge press hPa: 1200

Del. quantity cm3/

> 1000s.: 40,00...46,00

Shutoff

electromagnet>Volt: 24

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.0...110,0

mind> 1000S.: 60.0

Shutoff

electromagnet>Volt: 24

Inspection-pump test specifications Test specifications in parentheses

D01

Timing-device chara	cteristic:	+		
_		+	1st speed 1/min:	800
1st speed 1/min:		+	Charge-air pressure	
Charge press hPa:		+	point> hPa:	500
TD travel mm:		+	LDA-stroke mm:	7,0
> mm:	(0,902.30)	+	Shutoff	
electromagnet>Volt:	24,0	+	electromagnet>Volt:	24
2nd speed 1/min:	1600	+	Del. quantity cm3/:	53,5054,50
Charge press hPa:	1200	+		(50,5057.50)
TD travel mm:	3.704.30	+	2nd speed 1/min:	
> mm:	(3.304,70)	1	Charge press. hPa:	
Shutoff		1	Shutoff	
electromagnet>Volt:	24	1	electromagnet Volt:	24.0
3rd speed 1/min:		1	Del. quantity cm3/:	
	1200	1	> 1000s.:	_
TD travel mm:		1	3rd speed 1/min:	
> mm:	(2,103,50)	1	Charge press. hPa:	
Shutoff	(2,103,30)	\mathbf{I}	Shutoff	1200
	2/.	T	electromagnet>Volt:	2/.
electromagnet>Volt:	24	T	Del. quantity cm3/:	
Complex more managers		T		
Supply-pump pressure	e characteristic:	T		(13,027,0)
1-4	(00	†	4th speed 1/min:	
1st speed 1/min:		T	Charge press. hPa:	1200
Charge press. hPa:	1200	†	Shutoff	2/ 0
Supply-pump		+	electromagnet>Volt:	24,0
	4,905,50	+	Del. quantity cm3/:	40,046,0
> bar:	-	+		(38,547,5)
Shutoff		+	5th speed 1/min:	
electromagnet>Volt:		+	Charge press. hPa:	1200
2nd speed 1/min:		+	Shutoff	
Charge press. hPa:	1200	+	electromagnet>Volt:	24,0
Supply-pump		+	Del. quantity cm3/:	61,0065.00
pressure> bar:	6,507,10	+		(59,5065,50)
> bar:		+	6th speed 1/min:	
Shutoff		+	Charge press. hPa:	1200
electromagnet>Volt:	24	1	Shutoff	
3rd speed 1/min:		1	electromagnet>Volt:	24.0
Charge press. hPa:		 	Del. quantity cm3/:	
Supply-pump		1		(59,566,5)
pressure> bar:	8,59,1	1	7th speed 1/min:	
Shutoff		1	Charge press. hPa:	1200
electromagnet>Volt:	24	1	Shutoff	. 250
etectionagnets vote.		1	electromagnet>Volt:	24 N
Overflow quantity at	overflow valve	7	Del. quantity cm3/:	
Over 10w qualities at	LOVELLOW VALVE	Ι	8th speed 1/min:	550
1st speed 1/min:	400	I	Charge press. hPa:	
		T	Shutoff	
Charge press. hPa:	1200	T		27
Shutoff	3/	Ť	electromagnet>Volt:	
electromagnet>Volt:		†	Del. quantity cm3/:	
	75.0119.5	†	> 1000s.:	(30.5037.50)
quantity> cm3/10s:		†		
2nd speed 1/min:		+		
Charge press. hPa:	1200	+		
Shutoff		†	Electr. shutoff:	
electromagnet>Volt:		+		
	97,2180,5	+	1st speed 1/min:	
quantity> cm3/10s:	(82,2195.5)	+	Charge press. hPa:	
-		+	Del. quantity cm3/:	
Delivery-quant. and	breakaway char .:	+	> 1000s.:	(0.003.00)

```
Shutoff
electromagnet>volt: -
Idle delivery:
             1/min: 375
1st speed
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 5,0...9,0
             1000s.: (3.0...11.0)
               cm3/: 6,0
Dispersion
             10008.: (6,5)
             1/min: 425
2nd speed
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 0,00...3,00
            1000s.: -
3rd speed
             1/min: 275
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 40,0...54,0
            1000s.: -
Automatic starting fuel delivery:
1st speed
             1/min: 500
Shutoff
electromagnet>Volt: 24
Del. quantity cm3/: 29.00...39,0
            1000s.: -
2nd speed
             1/min: 200
Shutoff
electromagnet>Volt: 24,0
Del. quantity cm3/: 78,0...108,0
            1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                  : 20,0
Rated voltage
                  : 24,0
Mounting and assembly dimensions:
Designation
                mm: 3,5...3,7
K
KF
                mm: -
MS1
                mm: 1,4...1,7
LDA stroke
                mm: 7,0
                mm: KSB=5,7
XK
                mm: 33,0...35,0
Ya
                mm: 44,0...50,0
Yb
Remarks:
```

Note inst. in remarks column

Test sheet : SOF Edition : 09.08.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R698 : 0 460 424 141 Type number

Customer Part-No. :

Customer-specific information : IVECO-SOFIM Customer

Engine : 8142.43.3800

Power KW: 85

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer>: 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly>

Openina

bar: 250.00...253.00 Pressure>

Perforated-plate

mm: 0,5 diameter>

lest inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Charge press. hPa: 1200 Setting value mm: 1,50...1,70

Supply-pump pressure

1/min: 1100 Speed Charge press hPa: 1200

Setting value bar: 6,50...7,10

Full-load del. with charge press.:

1/min: 1750 Speed Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 62.50...63,50

cm3/: 4,0 Dispersion 1000s.: (4,5) >

Full-load del. w/out charge press.:

Speed 1/min: 550 Del. quantity cm3/

1000s.: 33,50...34,50

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

1000s.: 5,00...9,00

Del. quantity cm3/: 6.0 1000s.: (6,5)

Full-load speed regulation

1/min: 2000 Speed Charge press hPa: 1200

Del. quantity cm3/

1000s.: 40,00...46,00

Start:

1/min: 100 Speed

Del. quantity cm3/: 60.0...110,0

1000s.: 60.0 mind>

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1100 hPa: 1200 Charge press

mm: 1,50...1,70 TD travel mm: (0,90...2.30)

2nd speed 1/min: 1600 Charge press

hPa: 1200 mm: 3.70...4.30 TD travel mm: (3.30...4,70)

3rd speed 1/min: 1400 Charge press hPa: 1200

TD travel mm: 2,50...3,10

D04

> mm: (2,103,50)	- Charge press. hPa: 1200
4	Del. quantity cm3/: 62.066.0
Supply-pump pressure characteristic:	- 8th speed 1/min: 550
· · · · · · · · · · · · · · · · · · ·	- Charge press. hPa: -
1st speed 1/min: 600	Del. quantity cm3/: 33.5034.50
Charge press, hPa: 1200	> 1000s.: (30.5037.50)
Supply-pump +	•
pressure> bar: 4,905,50	-
> bar: -	-
2nd speed 1/min: 1100	- Electr. shutoff:
Charge press. hPa: 1200	
Supply-pump +	- 1st speed 1/min: 325
pressure> bar: 6,507,10	Charge press. hPa: -
pressure> bar: 6,507,10	Del. quantity cm3/: 0.003.00
3rd speed 1/min: 1800	> 1000s.: (0.003.00)
Charge press. hPa: 1200	Shutoff
Supply-pump	electromagnet>volt: -
pressure> bar: 8,59,1	
	Idle delivery:
Overflow quantity at overflow valve	Tate detivery:
Over 1 tow qualitates at over 1 tow valve	- 1st speed 1/min: 375
1st speed 1/min: 600	Del. quantity cm3/: 5,09,0
Change pages here 1200	> 1000s.: (3.011.0)
Charge press. hPa: 1200	
	Dispersion cm3/: 6,0 Dispersion cm3/: 6,5
quantity> cm3/10s: (60,0134,5)	
2nd speed 1/min: 1800	2nd speed 1/min: 425
Charge press. hPa: 1200	Del. quantity cm3/: 0,003,00
Overflow : 97,2180,5	> 1000s.: -
quantity> cm3/10s: (82,2195.5)	3rd speed 1/min: 275
T. A. T. T. T. T. T. T. T. T. T. T. T. T. T.	Del. quantity cm3/: 40,054,0
Delivery-quant. and breakaway char.:	> 1000s.: -
Delivery-quant. and breakaway char.:	> 1000s.: -
†	
1st speed 1/min: 800	> 1000s.: - Automatic starting fuel delivery:
1st speed 1/min: 800 Charge-air pressure-setting	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: -
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50)	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: -
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: -
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: -	> 1000s.: - Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000S.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000S.: - 3rd speed 1/min: 2100	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions:
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000S.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000S.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation
1st speed 1/min: 800 Charge-air pressure-setting point>	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7
1st speed 1/min: 800 Charge-air pressure-setting point>	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7 KF mm: -
1st speed 1/min: 800 Charge-air pressure-setting point>	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7 KF mm: - MS1 mm: 1,41,7
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7 KF mm: - MS1 mm: 1,41,7 LDA stroke mm: 5,5
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7 KF mm: - MS1 mm: 1,41,7 LDA stroke mm: 5,5 XK mm: KSB=5,7
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5)	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7 KF mm: - MS1 mm: 1,41,7 LDA stroke mm: 5,5 XK mm: KSB=5,7 Ya mm: 33,035,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5) 5th speed 1/min: 1800	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7 KF mm: - MS1 mm: 1,41,7 LDA stroke mm: 5,5 XK mm: KSB=5,7
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5) 5th speed 1/min: 1800 Cnarge press. hPa: 1200	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5) 5th speed 1/min: 1800 Cnarge press. hPa: 1200 Del. quantity cm3/: 61,0065.00	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0 > 1000s.: - 2nd speed 1/min: 200 Del. quantity cm3/: 78,0108,0 > 1000s.: - Mounting and assembly dimensions: Designation K mm: 3,53,7 KF mm: - MS1 mm: 1,41,7 LDA stroke mm: 5,5 XK mm: KSB=5,7 Ya mm: 33,035,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5) 5th speed 1/min: 1800 Cnarge press. hPa: 1200 Del. quantity cm3/: 61,0065.00 > 1000s.: (59,5066,50)	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5) 5th speed 1/min: 1800 Charge press. hPa: 1200 Del. quantity cm3/: 61,0065.00 > 1000s.: (59,5066,50) 6th speed 1/min: 1750	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5) 5th speed 1/min: 1800 Cnarge press. hPa: 1200 Del. quantity cm3/: 61,0065.00 > 1000s.: (59,5066,50) 6th speed 1/min: 1750 Charge press. hPa: 1200	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0
1st speed 1/min: 800 Charge-air pressure-setting point>	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0
1st speed 1/min: 800 Charge-air pressure-setting point> hPa: 500 LDA-stroke mm: 5,5 Del. quantity cm3/: 53,5054,50 > 1000s.: (50,5057.50) 2nd speed 1/min: 2200 Charge press. hPa: 1200 Del. quantity cm3/: 0.004.00 > 1000s.: - 3rd speed 1/min: 2100 Charge press. hPa: 1200 Del. quantity cm3/: 15,025,0 > 1000s.: (13,027,0) 4th speed 1/min: 2000 Charge press. hPa: 1200 Del. quantity cm3/: 40,046,0 > 1000s.: (38,547,5) 5th speed 1/min: 1800 Cnarge press. hPa: 1200 Del. quantity cm3/: 61,0065.00 > 1000s.: (59,5066,50) 6th speed 1/min: 1750 Charge press. hPa: 1200	Automatic starting fuel delivery: 1st speed 1/min: 500 Del. quantity cm3/: 29.0039,0

Note inst. in remarks column

Test sheet : SOF

Edition : 09.08.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R699 Type number : 0 460 424 142

Customer Part-No. :

Customer-specific information
Customer : IVECO-SOFIM

Engine : 8140.23.2585

Power KW: 76

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Opening

Pressure> bar: 250.00...253.00

Perforated-plate

diameter> mm: 0,5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200 Charge press. hPa: 1200 Setting value mm: 1,00...1,20

Supply-pump pressure

Speed 1/min: 1200 Charge press hPa: 1200

Setting value bar: 6,90...7,50

Full-load del. with charge press.:

Speed 1/min: 1100 Charge press. hPa: 1200 Del. quantity cm3/

> 1000s.: 58.00...59.00

Dispersion cm3/: 4,0 > 1000s.: (4,5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 30,00...31,00

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 5,00...9,00

Del. quantity cm3/: 6.0 > 1000s.: (6,5)

Full-load speed regulation

Speed 1/min: 2000 Charge press hPa: 1200

Del. quantity cm3/

> 1000s.: 40,00...46,00

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.0...110,0

mind> 1000s.: 60.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1200 Charge press hPa: 1200

TD travel mm: 1,00...1,20 mm: (0,40...1,80)

2nd speed 1/min: 1500 Charge press hPa: 1200

TD travel mm: 2,90...3,50 mm: (2,50...3,90)

3rd speed 1/min: 1800 Charge press hPa: 1200

TD travel mm: 4,50...5,30

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> mm:	(4,205,60)	<u> </u>	7th speed 1/		
		-	Charge press.	hPa:	1200
Supply-pump pressur	e characteristic: \dagger	-	Del. quantity c		
	+	-	8th speed 1/		
1st speed 1/min:		-	Charge press.		
Charge press. hPa:	1200 +	-	Del. quantity c		
Supply-pump	+	_	> 100	OS.:	(27,0034.00)
pressure> bar:	4,405,00	_			
> bar:	- +	-			
2nd speed 1/min:		-	Mech. shutoff:		
Charge press. hPa:	1200	-			
Supply-pump	+	-	1st speed 1/		
pressure> bar:	6,907,50	-	Charge press.	hPa:	1200
> bar:		-	Del. quantity c		
3rd speed 1/min:	1800	-	> 100	OS.:	-
Charge press. hPa:	1200	-			
Supply-pump	+	-	Electr. shutoff	:	
pressure> bar:	9,09,6	-			
> bar:	- +	-	1st speed 1/	min:	350
	+	-	Del. quantity c		
Overflow quantity a	t overflow valve	-	> 100	Os.:	(0.003.00)
	+	-	Shutoff		
1st speed 1/min:		-	electromagnet>v	olt:	
Charge press. hPa:	1200	-	_		
Overflow :	111.1155.5	-	Idle delivery:		
quantity> cm3/10s:	(96,1170,5)	- ,			
2nd speed 1/min:	1800	-	1st speed 1/1	min:	375
Charge press. hPa:	1200	-	Del. quantity c	m3/:	5,09,0
Overflow :	152.7208.30	-			(3.011.0)
quantity> cm3/10s:	(137,7223.30)	-		m3/:	
	+	•			(6,5)
Delivery-quant. and	breakaway char.:	-	2nd speed 1/1		
- ,	+	•	Del. quantity c	m3/:	0,003,00
	+	-		Os.:	
1st speed 1/min:	800 +	-	3rd speed 1/1	min:	275
Charge-air pressure-	-setting +	•	Del. quantity c	m3/:	34,054,0
point> hPa: LDA-stroke mm:	500	-		Os.:	
LDA-stroke mm:	4,8	•			
Del. quantity cm3/:	50,5051,50	•	Automatic start	ing 1	fuel delivery:
> 1000s.:	(47,5054.50)	•			
2nd speed 1/min:	2200 +		1st speed 1/1	min:	510
Charge press. hPa:		•	Del. quantity co		
Del. quantity cm3/:		•	> 1000	Os.:	-
> 1000s.:		•			
3rd speed 1/min:		•		min:	200
Charge press. hPa:		•	Shutoff		
Del. quantity cm3/:		•	electromagnet>Vo		
	(13,027,0)	•	Del. quantity cr		
4th speed 1/min:			> 1000	os.:	
Charge press. hPa:		•			
Del. quantity cm3/:		•	Mounting and as:	sembl	y dimensions:
	(38,547,5)				
5th speed 1/min:		•	Designation		25 22
Charge press. hPa:		•	K		3,53,7
Del. quantity cm3/:		•	KF	mm:	
	(58,0065,00)		MS1		1,31,6
6th speed 1/min:			LDA stroke	mm:	
Charge press. hPa:			XK		KSB=10,0
Del. quantity cm3/:	15. (2. · · · · · · · · · · · · · · · · · · ·		Ya		33,035,0
> 1000\$.:	(55,062,0) +		Yb	mm:	44,050,0

Remarks:

Note inst. in remarks column

Test sheet : SOF

Edition : 09.08.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R713 Type number : 0 460 424 145

Customer Part-No. :

Customer-specific information : IVECO-SOFIM Customer

: 8140,43,2610 Engine

KW: 85 Power

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42,00...50,00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

Opening |

bar: 250.00...253.00 Pressure>

Perforated-plate

diameter> mm: 0,5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450

x Length>

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Charge press. hPa: 1200 Setting value mm: 1,50...1,70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1100 Speed Charge press hPa: 1200

Setting value bar: 6,50...7,10

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 1750 Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 62.50...63,50 >

Shutoff

electromagnet>Volt: 12 cm3/: 4,0Dispersion 1000s.: (4,5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

1000s.: 33,50...34,50

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/

1000s.: 5,00...9,00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6,5)

Full-load speed regulation

1/min: 2000 Speed Charge press hPa: 1200

Del. quantity cm3/

1000s.: 40,00...46,00

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 60.0...110,0

1000s.: 60.0 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

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	+	Shutoff	
Timing-device characteristic:	+	electromagnet>Volt:	12
	+	Del. quantity cm3/:	
1st speed	+	> 1000s.:	(50,5057.50)
Charge press hPa: 1200	†	2nd speed 1/min:	
TD travel mm: 1,501,70	†	Charge press. hPa:	1200
> mm: (0,902.30)	†	Shutoff	12.0
electromagnet>Volt: 12,0 2nd speed	†	<pre>electromagnet Volt: Del. quantity cm3/:</pre>	16,0
Charge press hPa: 1200	Ι	> 1000s.:	-
TD travel mm: 3.704.30	I	3rd speed 1/min:	
> mm: (3.304,70)	1	Charge press. hPa:	
Shutoff	1	Shutoff	1200
electromagnet>Volt: 12	1	electromagnet>Volt:	12
3rd speed 1/min: 1400	+	Del. quantity cm3/:	
Charge press hPa: 1200	+	> 1000s.:	(13,027,0)
TD travel mm: 2,503,10	Ì	4th speed 1/min:	2000
> mm: (2,103,50)	+	Charge press. hPa:	1200
Shutoff	+	Shutoff	_
electromagnet>Volt: 12	+	electromagnet>Volt:	
	+	Del. quantity cm3/:	
Supply-pump pressure characteristic:	†		(38,547,5)
1mt amand 1/min. 400	†	5th speed 1/min:	
1st speed 1/min: 600 Charge press. hPa: 1200	Ť	Charge press. hPa: Shutoff	1200
Supply-pump	I	electromagnet>Volt:	12 0
pressure> bar: 4,905,50	Ι	Del. quantity cm3/:	
> bar: -	Ι		(59,5066,50)
Shutoff	1	6th speed 1/min:	
electromagnet>Volt: 12	1	Charge press. hPa:	
2nd speed 1/min: 1100	1	Shutoff	
Charge press. hPa: 1200	+	electromagnet>Volt:	12,0
Supply-pump	+	Del. quantity cm3/:	62,563,5
pressure> bar: 6,507,10	+		(59,566,5)
> bar: -	†	7th speed 1/min:	
Shutoff	†	Charge press. hPa:	1200
electromagnet>Volt: 12	Ť	Shutoff electromagnet>Volt:	12 0
Overflow quantity at overflow valve	Ι	Del. quantity cm3/:	
over flow qualitity at over flow valve	I	8th speed 1/min:	
1st speed 1/min: 600	1	Charge press. hPa:	
Charge press. hPa: 1200	1	Shutoff	
Shutoff	1	electromagnet>Volt:	12
electromagnet>Volt: 12	+	Del. quantity cm3/:	
Overflow : 75.0119.5	+	> 1000s.:	(30.5037.50)
quantity> cm3/10s: (60,0134,5)	+		
2nd speed 1/min: 1800	+		
Charge press. hPa: 1200	+		
Shutoff	†	Electr. shutoff:	
electromagnet>Volt: 12	†	1st speed 1/min:	725
Overflow : 97,2180,5 quantity> cm3/10s: (82,2195.5)	I	1st speed 1/min: Charge press. hPa:	=
quarterty/ UIIJ/105. (06,6173.3)	I	Del. quantity cm3/:	
Delivery-quant. and breakaway char.:	1		(0.003.00)
POLITOIT AMMILET MINE OF CHINANAL CHIMITE	1	Shutoff	
	+	electromagnet>volt:	-
1st speed 1/min: 800	+	-	
Charge-air pressure-setting	+	Idle delivery:	
point> hPa: 500	+		
LDA-stroke mm: 5,5	+	1st speed 1/min:	375

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Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 5,0...9,0 > 1000S.: (3.0...11.0)
               cm3/: 6,0
Dispersion
             1000s.: (6,5)
2nd speed
              1/min: 425
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0,00...3,00
             1000s.: -
              1/min: 275
3rd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40,0...54,0
             1000s.: -
Automatic starting fuel delivery:
              1/min: 500
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 29.00...39,0
             1000s.: -
              1/min: 200
2nd speed
Shutoff
electromagnet>Volt: 12,0
Del. quantity cm3/: 78,0...108,0 > 10005:: -
Shutoff electromagnet:
Cut-in
>min voltage
                   : 10,0
                   : 12,0
Rated voltage
Mounting and assembly dimensions:
Designation
                 mm: 3,5...3,7
K
KF
                 mm: -
MS1
                 mm: 1,4...1,7
LDA stroke
                 mm: 5,5
XK
                 mm: KSB=5,7
                 mm: 33,0...35,0
Ya
Yb
                 mm: 44,0...50,0
Remarks:
                   :
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : CAS Edition : 14.08.96 replaces Calibrating oil : ISO-4113 Injection pump : VE6/12F1100R102 Type number : 0 460 426 025 Customer Part-No.: 3 228 639 Customer-specific information Customer : CASE : DT 402 Engine 1/min: 103 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 020 assembly> Opening bar: 169.00...175.00 Pressure> Perforated-plate diameter> mm: 0.6 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery mm: 0,2Prestroke > (from BDC): +-0,02(0,04) Start of delivery block mm: 1.0 Piston stroke mm: +-0.02(0.06)> Outlet > Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 600 Charge press. hPa: 1000 Setting value mm: 3.4...3.6 Supply-pump pressure 1/min: 600 Charge press hPa: 1000 Setting value bar: 5.0...5.6 Full-load del. with charge press.: Speed 1/min: 800 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 99.0...100.0 cm3/: 3.5Dispersion 1000s.: (3.5) Full-load del. w/out charge press.: 1/min: 600 Speed Del. quantity cm3/ 1000s.: 81.5...82.5 Low-idle speed regulation 1/min: 375 Del. quantity cm3/ 1000s.: 20.0...26.0 Del. quantity cm3/: 5.0 1000s.: (5.0) Full-load speed regulation 1/min: 1200 Speed Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 33.0...36.0 Start: 1/min: 100 Speed Del. quantity cm3/: 85.0...145.0 1000s.: 85.0 mind> Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 400 1st speed hPa: 1000 Charge press mm: 1,3...2,1 TD travel mm: (1.0...2.4) 2nd speed 1/min: 600 Charge press hPa: 1000 mm: 3.2...3.6 TD travel mm: (2.7...4.1)

3rd speed 1/min: 700 Charge press hPa: 1000 TD travel mm: 3.64.4	+ + + + + + + + + + + + + + + + + + + +	7th speed 1/min: 600 Charge press. hPa: - Del. quantity cm3/: 81.582.5
> mm: (3.34.7)	+	> 1000s.: (79.085.0)
Supply-pump pressure characteristic:	+	Mech. shutoff:
1st speed 1/min: 400	+	
Charge press. hPa: 1000 Supply-pump pressure> bar: 3.94.5	‡	1st speed 1/min: 1080 Charge press. hPa: 1000
pressure/ par: 5.94.5	Ť	Del. quantity cm3/: 0.03.0
2nd speed 1/min: 600	T	> 1000s.: -
Charge press. hPa: 1000	Ť	Talla ala la como co
Supply-pump	†	Idle delivery:
pressure> bar: 5.05.6 3rd speed 1/min: 1080	+	4
3rd speed 1/min: 1080	+	1st speed 1/min: 375
Charge press. hPa: 1000	†	Del. quantity cm3/: 20.026.0
Supply-pump	+	> 1000s.: (18.028.0)
pressure> bar: 6.97.5	‡	Dispersion cm3/: 5.0 > 1000s.: (5.0)
Overflow quantity at overflow valve	+	2nd speed 1/min: 410
	+	Del. quantity cm3/: 0.510.5
1st speed 1/min: 600	+	> 1000s.: -
Charge press. hPa: -	+	3rd speed 1/min: 500
Overflow : 41.7083.40	+	Del. quantity cm3/: 0.03.0
quantity> cm3/10s: (26.7098.40)	+	> 1000s.: -
2nd speed 1/min: 1080	+	
Charge press. hPa: 1000	+	Automatic starting fuel delivery:
Overflow : 55.60139.00	1	,
quantity> cm3/10s: (40.60154.00)	1	1st speed 1/min: 200
	1	Del. quantity cm3/: 95.0155.0
Delivery-quant. and breakaway char.:	1	> 1000s.: VH> VL
beervery quarter and breakandy chart.	1	10000:: 111 > 12
	\mathbf{I}	2nd speed 1/min: 440
1st speed 1/min: 600	I	Del. quantity cm3/: 35.085.0
Charge-air pressure-setting	Ŧ	> 1000s.: VH> VL
thange-air pressure-secting	T	> 10003 VH ==> VL
point> hPa: 200 LDA-stroke mm: 4.0	Ť	/+b amand 1/~in. 100
	†	4th speed 1/min: 100
Del. quantity cm3/: 89.090.0	+	Del. quantity cm3/: 85.0145.0
> 1000s.: (86.591.5)	+	> 1000s.: VH> VL
2nd speed 1/min: 1280	+	
Charge press. hPa: 1000	+	Shutoff electromagnet:
Del. quantity cm3/: 0.03.0	+	_
> 1000s.: -	+	Cut-in
3rd speed	+	>min voltage : -
Charge press. hPa: 1000	+	Rated voltage : -
Del. quantity cm3/: 5.035.0	+	_
> 1000s.: -	+	Mounting and assembly dimensions:
4th speed 1/min: 1200	1	
Charge press. hPa: 1000	1	Designation
Del. quantity cm3/: 33.039.0	1	K mm: -
> 1000s.: (28.044.0)	1	KF mm: 5.35.7
5th speed 1/min: 1080	1	MS mm: 1.418
	I	LDA stroke mm: 4.0
	T	
Del. quantity cm3/: 94.597.5	T	Ya mm: 37.239.2
> 1000s.: (92.599.5)	†	Yb mm: 49.257,4
6th speed 1/min: 800	†	
Charge press. hPa: 1000	+	Remarks:
Del. quantity cm3/: 99.0100.0	+	:
> 1000s.: (96.5101.5)	+	:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test sheet : VWW

Edition : 30.07.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/8F2400R677 Type number : 0 460 484 108

Customer Part-No. :

Customer-specific information

Customer : VW

Engine : 1.6L

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 000

Opening

Pressure> bar: 144.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500

Setting value mm: 3.40...3.80

AFB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500

Setting value bar: 6.30...6.90

KSB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1500

Del. quantity cm3/

> 1000s.: 31.5...32.5

KSB/AFB

11

valve > Volt: 12

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.5 > 1000s.: (2.5)

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 13.0...17.0

KSB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 2.5
> 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2550

Del. quantity cm3/

> 1000s.: 17.0...23.0

KSB/AFB

valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 31.50...61.50

mind> 1000s.: 31.50

KSB/AFB

Valve > Volt: 12

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 600

TD travel mm: 1.0...2.6

> mm:	(0.82.8)	+ K	SB/AFB		
KSB/AFB		+ va	alve >	Volt:	12
valve > Volt:	_	∔ s!	hutoff		
electromagnet>Volt:	12	•	lectromagne	t>Volt:	12
2nd speed 1/min:	1000				55.60139.00
	1.202.40				(40.60154.00)
	(1.102.50)	T	uantity c	11137 105.	(40.00154.00)
	(1.102.30)	†	. 1		to a set of the set of the
KSB/AFB	40	+ 00	etivery-qua	nt. and	breakaway char.:
<pre>valve > Volt:</pre>	12	+			
Shutoff		+			
electromagnet>Volt:	12	+ 2r	nd speed	1/min:	2800
3rd speed 1/min:	1500	+ K	SB/AFB		
TD travel mm:	3.104.10	+ va	alve >	Volt:	12
	(3.00,4.20)	1	hutoff		
KSB/AFB			lectromagne	+ Vol++	12
valve > Volt:	12	1 %	el quantit	c cm3/:	0.003.00
Shutoff	16				(0.003.00)
	13				
electromagnet>Volt:			rd speed	17m1n:	2000
4th speed 1/min:		•	SB/AFB		40
	6.007.20	(-	Volt:	12
	(5.907.30)	*	hutoff		
KSB/AFB			lectromagne		
valve > Volt:	12	+ De	el. quantity	y cm3/:	4.0012.00
Shutoff				1000s.:	(3.0013.00)
electromagnet>Volt:	12	¹ 51	th speed	1/min:	2550
3,100			SB/AFB		
Supply-pump pressure	n characteristic:	1		Volt:	12
publicy bomb by eason	e character istre.			voct.	12
A=+ ====== A /======	/00	- 1	hutoff		13
1st speed 1/min:	000		lectromagne		
Supply-pump					17.0023.00
•	3.404.40				(16.0024.00)
KSB/AFB		+ 6t	th speed	1/min:	2400
<pre>valve > Volt:</pre>	12	+ KS	SB/AFB		
Shutoff		→ va	alve >	Volt:	12
electromagnet>Volt:	12	∔ st	nutoff		
2nd speed 1/min:			lectromagnet	t>Volt:	12
Supply-pump					28.030.0
pressure> bar:	6.107.10				(27.031.0)
KSB/AFB	0.10	1		1/min:	
	13			(7)81111;	1500
valve > Volt:	12		SB/AFB	14.14	40
Shutoff	40		alve >	Volt:	12
electromagnet>Volt:			nutoff		
3rd speed 1/min:	2400		Lectromagnet		
Supply-pump		+ De	el. quantity	/ cm3/:	31.532.5
pressure> bar:	8.809.80	+ >			(30.034.0)
KSB/AFB		- 8t	th speed	1/min:	600
valve > Volt:	12		SB/AFB		
Shutoff				Volt:	12
electromagnet>Volt:	12	1	nutoff		
etecti omagnet/vocc.	16	1	.ectromagnet	->1/01++	10
Oursell and annual days and		T 50	lectromagne (23.527.5
Overflow quantity at	overtiow valve	1			
	400	+ >		10005.:	(22.528.5)
1st speed 1/min:	600	†			
KSB/AFB		+			
valve > Volt:	12	+			
Shutoff		∔ El	ectr. shutc	off:	
electromagnet>Volt:	12	+			
Overflow :	44.4088.80	15	st speed	1/min:	475
quantity> cm3/10s:					0.003.00
2nd speed 1/min:					(0.003.00)
CITA 30000 1/11/11:	LTUU	100	ı		······································

```
Shutoff
electromagnet>volt: -
KSB/AFB
          > Volt: 12
valve
Damper set qty.:
Automatic starting fuel delivery:
             1/min: 350
1st speed
KSB/AFB
          > Volt: 12
valve
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 32.00...42.00
            1000s.: (32.00...42.00)
             1/min: 500
2nd speed
KSB/AFB
valve
          > Volt: 12
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 19.50...29.50
            1000s.: (19.50...29.50)
Shutoff electromagnet:
Cut-in
>min voltage
                  : 10.0
Rated voltage
                  : 12.0
Mounting and assembly dimensions:
Designation
K
                mm: 3.2...3.4
                mm: 5.2...5.6
KF
MS
                mm: 1.6...2.0
Ya
                mm: 39.4...41.4
                mm: 45.3...58.2
Yb
Remarks:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end
Yb = Distance between VE flange and
speed-control lever in rated speed
position
Measurement point = edge of control
lever on distributor-head end
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : PER 5,0 K Edition : 23.07.91 replaces Calibrating oil : ISO 4113 Injection pump : VF4/11F1500R275-2 Type number : 0 460 414 092 Customer-specific information Customer : PERKINS Engine : 500.DI TEST BENCH REQUIREMENTS Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly> Opening | bar: 130.00...133.00 Pressure> Test inj. tubing : 1 680 750 073 Outside diameter : 6 x Wall>thickness : 2 mm: 450 x Length> Start of delivery mm: 0.50 Prestroke (from BDC): +-0.02(0.04)Start of delivery block Piston stroke mm: 1.42 mm: +-0.02(0.06): A Outlet > Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1100

Volt: 12

Setting value mm: 2,1...2,5

electromagnet>Volt: 12 Supply-pump pressure 1/min: 1100 Speed Setting value bar: 5.30...5.90 KSB/AFB valve Volt: 12 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: 1/min: 600 Speed Del. quantity cm3/ 1000s.: 20.50...21.50 > 11 KSB/AFB valve > Volt: 12 Shutoff electromagnet>Volt: 12 cm3/: 3,5 Dispersion 1000s.: -Low-idle speed regulation 1/min: 300 Speed Del. quantity cm3/ 1000s.: 10.00...14.00 KSB/AFB Volt: 12 valve Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.0 1000s.: -Full-load speed regulation 1/min: 1575 Speed Del. quantity cm3/ 1000s.: 11.00...21.00 KSB/AFB > Volt: 12 valve Shutoff electromagnet>Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: mind> 1000s.: 60.0 KSB/AFB Valve > Volt: 12 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic:

Speed

AFB/AFB

valve > Shutoff

1st speed 1/min: TD travel mm:	700 1.403.80	†	electromagnet>Volt:	12
> mm: KSB/AFB		+	Overflow quantity a	t overflow valve
		T	1-4 1 1/	(00
valve > Volt:		†	1st speed 1/min:	OUU
electromagnet>Volt:		†	KSB/AFB	43
2nd speed 1/min:		†	valve > Volt:	12
	0.401.20	+	Shutoff	
> mm: KSB/AFB	(0.101.50)	†	<pre>electromagnet>Volt: Overflow :</pre>	
valve > Volt:	10	T	quantity> cm3/10s:	(24 70 09 /0)
Shutoff		Ŧ	2nd speed 1/min:	1450
electromagnet>Volt:		+	KSB/AFB	
3rd speed 1/min:		+	valve > Volt:	12
	2.102.50	+	Shutoff	
	(1.603.00)	+	electromagnet>Volt:	
KSB/AFB		+		55.60139.00
<pre>valve > Volt: Shutoff</pre>	12	‡	quantity> cm3/10s:	(40.60153.00)
electromagnet>Volt:	12	+	Delivery-quant. and	breakaway char.
4th speed 1/min:		+	• •	•
	3.404.20	+		
	(3.104.50)	1	1st speed 1/min:	1650
KSB/AFB		+	KSB/AFB	
valve > Volt:	12	1	valve > Volt:	12
Shutoff		1	Shutoff	12
electromagnet>Volt:	12	1	electromagnet>Volt:	12
5th speed 1/min:		Ι	Del. quantity cm3/:	
	3.704.50	Ι	> 1000s.:	
> ma:	(3.404.80)	I	2nd speed 1/min:	
KSB/AFB	(3.40.,.4.60)	T	KSB/AFB	1000
	12	T		12
<pre>valve > Volt:</pre>	12	T	valve > Volt:	12
Shutoff	40	Ť	Shutoff	12
electromagnet>Volt:	12	†	electromagnet Volt:	16
		†	Del. quantity cm3/:	
Supply-pump pressure	e characteristic:	†	> 1000s.:	
	-00	†	3rd speed 1/min:	1575
1st speed 1/min:	800	+	KSB/AFB	•
Supply-pump		+	<pre>valve > Volt:</pre>	12
	4.104.70	+	Shutoff	
> bar:	-	t	electromagnet>Volt:	
KSB/AFB		+	Del. quantity cm3/:	
valve > Volt:	12	+		(10.0022.00)
Shutoff		+	4th speed 1/min:	1450
<pre>electromagnet>Volt:</pre>		+	KSB/AFB	
2nd speed 1/min:	1100	+	valve > Volt:	12
Supply-pump		+	Shutoff	
pressure> bar:	5.305.90	+	electromagnet>Volt:	12
> bar:	-to-	+	Del. quantity cm3/:	
KSB/AFB		+	> 1000s.:	(29.5035.50)
valve voit:	12	+	5th speed 1/min:	1200
Shutoff		+	KSB/AFB	
electromagnet>Volt:	12	+	valve > Voit:	12
3rd speed 1/min:		+	Shutoff	
Supply-pump		+	electromagnet>Volt:	12
	6.507.10	+	Del. quantity cm3/:	
> bar:		+		(29.5035.50)
KSB/AFB		+	6th speed 1/min:	
valve > Volt:	12	1	KSB/AFB	
Shutoff		+	valve > Volt:	12

Shutoff		+	Shutoff		
electromagnet>Volt:	12	+	electromagnet>Vo		
Del. quantity cm3/:	30.5032.50	+	Del. quantity co		
	(28.5034.50)	+	> 1000	Js.:	-
7th speed 1/min:	800	†	2	•	/00
KSB/AFB valve > Volt:	12	†	•	min:	400
	12	†	KSB/AFB valve > Vo	-1	10
Shutoff electromagnet>Volt:	10	T.	<pre>valve > Vo Shutoff</pre>)((:	12
Del. quantity cm3/:	25 50 28 50	Ι	electromagnet>Vo	1+.	12
	(24.0030.00)	1	Del. quantity cm		
8th speed 1/min:		1		DS.:	
KSB/AFB		1			
<pre>valve > Volt:</pre>	12	+	Shutoff electron	nagne	et:
Shutoff		+		_	
electromagnet>Volt:		+	Cut-in		
Del. quantity cm3/:		+	>min voltage		10.0
> 1000s.:	(18.5023.50)	+	Rated voltage	:	12.0
		†		1. 1	
		†	Mounting and ass	emb (y almensions:
Electr. shutoff:		Ī	Decianation		
Lieuri Siluroii:		I	Designation K	mm:	_
1st speed 1/min:	300	I			K-OT
Del. quantity cm3/:		1			1.11.5
> 1000s.:	-	1		mm:	
Shutoff		+			17.019.0
electromagnet>volt:	_	+			12.916.3
KSB/AFB		+			
<pre>valve > Volt:</pre>	12	+	Remarks:		
		+			
Idle delivery:		†			
1-+ 1 /	700	†			
1st speed 1/min: >KSB/AFB	300	†			
valve > Volt:	12	Ι			
Shutoff	14	I			
electromagnet>Volt:	12	1			
Del. quantity cm3/:	10.0014.00	1			
	(8.0016.00)	1			
2nd speed 1/min:		+			
KSB/AFB		+			
valve > Volt:	12	+			
Shutoff	40	+			
electromagnet>Volt:		†			
Del. quantity cm3/:		†			
> 1000s.: 3rd speed 1/min:		T			
3rd speed 1/min: KSB/AFB	330	I			
valve > Volt:	12	1			
Shutoff	,_	1			
electromagnet>Volt:	12	+			
Del. quantity cm3/:		+			
	(0.508.50)	+			
_		+			
Automatic starting f	uel delivery:	+			
	250	+			
1st speed 1/min:	25U	†			
KSB/AFB	12	İ			
VM VA					

Note inst. in remarks column

Test sheet : FOR Edition : 19.03.96

replaces :

Calibrating oil : ISO 4113

Injection pump : VE4/11F2000R663 Type number : 0 460 414 132

Customer-specific information Customer : OTOSAN

Engine : 2.5.DI

Power KW: 74

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 114

Opening |

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0.4

Test inj. tubing : 1 680 750 073

Outside diameter : 6 x Wall>thickness : 2 x Length> mm: 450

Start of delivery block
Piston stroke mm: 0.62
> mm: +-0.05

Outlet > : B

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250 Charge press. hPa: 1000 Setting value mm: 2.9...3.5 Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250 Charge press hPa: 1000

Setting value bar: 6.70...7.30

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 800 Charge press. hPa: 1000

Del. quantity cm3/

> 1000s.: 41.8...42.2

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1000

Del. quantity cm3/

> 1000s.: 28.5...29.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 3.0 > 1000s.: (4.0)

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 6.7...8.7

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 > 1000S.: (4.0)

Full-load speed regulation

Speed 1/min: 2200 Charge press hPa: 1000

Del. quantity cm3/

> 1000s.: 16.80...18.80

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.0...100.00

mind> 1000s.: 60.0

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic: +		+	Charge-air pressure	
		+	point> hPa:	
1st speed 1/min:		+		5.3
Charge press hPa:		+	Shutoff	
TD travel mm:	1.32.1	+	electromagnet>Volt:	12
> mm:	(0.82.6)	+	Del. quantity cm3/:	34.535.5
electromagnet>Volt:	12	+	> 1000s.:	
2nd speed 1/min:		1	2nd speed 1/min:	
	1000	1	Charge press. hPa:	
TD travel mm:		1	Shutoff	1000
> mm:	(2.43.6)	1	electromagnet Volt:	12
Shutoff	(2.45.0)	T	Del. quantity cm3/:	
	12	T		
electromagnet>Volt:		T	1000011	
3rd speed 1/min:		Ť	3rd speed 1/min:	
	1000	†	Charge press. hPa:	1000
	4.905.70	t	Shutoff	
	(4.406.20)	+	electromagnet>Volt:	
Shutoff		+	Del. quantity cm3/:	
electromagnet>Volt:	12	+		(12.8022.80)
		+	4th speed 1/min:	2150
Supply-pump pressur	e characteristic:	+	Charge press. hPa:	
		+	Shutoff	
1st speed 1/min:	1000	+	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	
Supply-pump	(333	1		(18.5030.50)
	6.206.80	1	5th speed 1/min:	
Shutoff	0.200.00	1	Charge press. hPa:	
	10	Ţ	Shutoff	1000
electromagnet>Volt:		T		10
2nd speed 1/min:		†	electromagnet>Volt:	12 10 10 00
Charge press. hPa:	1000	†	Del. quantity cm3/:	
Supply-brumb		+		(39.2044.20)
•	6.707.30	+	6th speed 1/min:	
Shutoff		+	Charge press. hPa:	-
electromagnet>Volt:		+	Shutoff	
3rd speed 1/min:		+	electromagnet>Volt:	12
Charge press. hPa:	1000	+	Del. quantity cm3/:	28.5029.50
Supply-pump		+	> 1000s.:	(26.5031.50)
pressure> bar:	8.208.80	+	7th speed 1/min:	800
Shutoff		+	Charge press. hPa:	1000
electromagnet>Volt:	12	1	Shutoff	
otors anagries (otor		1	electromagnet>Volt:	12
Overflow quantity a	t overflow valve	1	Del. quantity cm3/:	41 80 42 20
over read quarterey a	t over reon vacve	1		(39.0045.00)
1st speed 1/min:	800	I	70005	(37.0043.007
Charge press. hPa:		1		
Shutoff	1000	T		
	42	T		
electromagnet>Volt:		Ť	Electr. shutoff:	
	88.80133.30	†	4	500
quantity> cm3/10s:		†	1st speed 1/min:	
2nd speed 1/min:		+	Del. quantity cm3/:	
Charge press. hPa:	1000	+	> 1000s.:	-
Shutoff		+	Shutoff	
electromagnet>Voit:		+	electromagnet>volt:	~
	111.1194.40	+		
quantity> cm3/10s:	(96.10209.40)	İ	Idle delivery:	
Delivery-quant. and	breakaway char.:	Į	1st speed 1/min:	/ -25
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	+	Shutoff	
		+	electromagnet>Voit:	12
1st speed 1/min:	1000	+	Del. quantity c	

1000s.: (3.70...11.70) Automatic starting fuel delivery: 1st speed 1/min: 480 Shutoff electromagnet>Volt: 12
Del. quantity cm3/: 20.00...40.00
> 1000s.: -2nd speed 1/min: 300 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 48.0...78.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 2.7...2.9 K KF mm: -MS1 mm: 1.7...2.0 mm: KSB 10.0 FH mm: 2.5 TLA-E

mm: 42.8...45.8 Ya mm: 59.5...71.5 Yb

Remarks:

: FB - KDEP 1151

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Timing-device travel Note inst. in remarks column Speed 1/min: 1100 Charge press. hPa: 1100 Test sheet Setting value mm: 0.80...1.20 : CUM Edition : 18.03.96 AFB/AFB valve > : 17.05.89 Volt: 12 replaces Calibrating oil : ISO 4113 Shutoff electromagnet>Volt: 12 : VE4/12F1250R301 Injection pump Type number : 0 460 424 041 Supply-pump pressure Customer Part-No.: 3 911 240 1/min: 850 Speed Customer-specific information Charge press hPa: 1100 Customer : CDC Setting value bar: 4.50...5.10 KSB/AFB Engine : 4BTA 390 A valve Volt: 12 Shutoff Power KW: 88 electromagnet>Volt: 12 Speed 1/min: 2500 Full-load del. with charge press.: TEST BENCH REQUIREMENTS 1/min: 850 Speed Overflow restricti: 1 463 456 303 Charge press. hPa: 1100 Del. quantity cm3/ Calibrating-oil 1000s.: 84.5...85.5 return>temp. > °C KSB/AFB with>thermometer> : 40.00...48.00 valve > Volt: 12 Electronically> : 42.00...50.00 Shutoff electromagnet>Volt: 12 cm3/: 4.0 Inlet press., bar : 0.30...0.40 Dispersion 1000s.: (4.5) Calibrating nozzle-holder : 1 688 901 027 Full-load del. w/out charge press.: assembly> 1/min: 550 Opening Speed bar: 250.00...253.00 Del. quantity cm3/ Pressure> 1000s.: 56.50...57.50 > KSB/AFB 11 Perforated-plate diameter> mm: 0.5 valve > Volt: 12 Shutoff electromagnet>Volt: 12 Test inj. tubing : 1 680 750 017 Low-idle speed regulation Outside diameter : 6 x Wall>thickness : 2 Speed 1/min: 375 hPa: x Length> mm: 840 Charge press Del. quantity cm3/ 1000s.: 9.00...13.0 Start of delivery > KSB/AFB Prestroke mm: 0.3 (from BDC): +-0.02(0.04)> Volt: 12 valve Shutoff Start of delivery block electromagnet>Volt: 12 Del. quantity cm3/: 5.5 mm: 1.25 Piston stroke 1000s.: (7.0) mm: +-0.02(0.04)Outlet > Full-load speed regulation Injection-pump setting values

1/min: 1340

Speed

Test specifications in parentheses

Charge press hPa:	1100	+	Supply-pump	
Del. quantity cm3/	62.068.0	+		2.903.50
KSB/AFB	62.066.0	I	KSB/AFB valve > Volt:	12
valve > Volt:	12	+	Shutoff	
Shutoff		+	electromagnet>Volt:	
electromagnet>Volt:	12	+	2nd speed 1/min:	
C+==+:		†	Charge press. hPa:	1100
Start:		I	Supply-pump pressure> bar:	4 50 5 10
Speed 1/min:	100	1	KSB/AFB	7.505.10
Charge press hPa:		+	<pre>valve > Volt:</pre>	12
Del. quantity cm3/:		+	Shutoff	
mind> 1000s.:	70.00	+	electromagnet>Volt:	
KSB/AFB Valve > Volt:	12	†	3rd speed 1/min: Charge press. hPa:	
<pre>Valve > Volt: Shutoff</pre>	12	I	Supply-pump	1 100
electromagnet>Volt:	12	1	pressure> bar:	5.506.10
		+	KSB/AFB	
Inspection-pump tes		+	valve > Volt:	12
Test specifications	in parentheses	+	Shutoff	40
Timing-device chara	stopistic	†	<pre>electromagnet>Volt: 4th speed 1/min:</pre>	
riming-device chara	cteristic:	I	Charge press. hPa:	
1st speed 1/min:	400	1	Supply-pump	1100
Charge press hPa:		+		6.16.7
TD travel mm:	2.503.50	+	KSB/AFB	
> mm:	_	+	valve > Volt:	12
KSB/AFB		†	Shutoff	10
<pre>valve > Volt: electromagnet>Volt:</pre>		I	electromagnet>Volt:	12
2nd speed 1/min:		1	Overflow quantity at	t overflow valve
	1100	+	The state of the s	
TD travel mm:	0.21.0	+	1st speed 1/min:	
	(0.01.3)	+	Charge press. hPa:	-
KSB/AFB	42	+	KSB/AFB	10
<pre>valve > Volt: Shutoff</pre>	12	Ī	<pre>valve > Volt: Shutoff</pre>	12
electromagnet>Volt:	12	I	electromagnet>Volt:	12
3rd speed 1/min:		1		4183
Charge press hPa:	1100	+	quantity> cm3/10s:	(2698)
	0.801.20	+	2nd speed 1/min:	
	(0.301.70)	†	Charge press. hPa:	1100
KSB/AFB valve > Volt:	12	Ī	KSB/AFB valve > Volt:	12
Shutoff	12	I	Shutoff	12
electromagnet>Volt:	12	+	electromagnet>Volt:	12
4th speed 1/min:		+	Overflow :	55138
Charge press hPa:	1100	+	quantity> cm3/10s:	(40153)
TD travel mm:	1.42.2	†	Nal &	haratana abaa a
	(1.12.5)	İ	Delivery-quant. and	preakaway char.:
KSB/AFB valve > Volt:	12	I		
Shutoff	* tu	1	1st speed 1/min:	700
electromagnet>Volt:	12	+	Charge-air pressure-	
_		+	point> hPa:	600
Supply-pump pressure	e characteristic:	†	LDA-stroke mm:	6.5
1st speed 1/min.	550	İ	KSB/AFB valve > Volt:	12
1st speed 1/min: Charge press. hPa:		I	Shutoff	16
,, 5- p. 555 4.	· ·	•		

electromagnet>Volt:	12	+	Charge press. hPa:	: 1100
Del. quantity cm3/:	73 5 74 5	1	KSB/AFB	
	(70.078.0)	1	valve > Volt:	. 12
2nd speed 1/min:				12
			Shutoff	40
Charge press. hPa:	1100	†	electromagnet>Volt:	
KSB/AFB		+	Del. quantity cm3/:	
valve > Volt:	12	+	> 1000s.:	
Shutoff		+	10th speed 1/min:	: 550
electromagnet Volt:	12	+	Charge press. hPa:	
Del. quantity cm3/:	0.03.0	1	KSB/AFB	
> 1000s.:		1	valve > Volt:	. 12
3rd speed 1/min:			Shutoff	14
				40
Charge press. hPa:	1100		electromagnet>Volt:	
KSB/AFB	40	†	Del. quantity cm3/:	56.557.5
valve > Volt:	12	+	> 1000s.:	(53.061.0)
Shutoff		+		
electromagnet>Volt:	12	+		
Del. quantity cm3/:		+	Mech. shutoff:	
> 1000s.:		1		
4th speed 1/min:		1	1st speed 1/min:	1250
Charge press. hPa:	1100		Del. quantity cm3/:	
KSB/AFB	40		> 1000s.:	_
valve > Volt:	12		Shutoff	
Shutoff		+	electromagnet>volt:	12
electromagnet>Voit:	12	+	KSB/AFB	
Del. quantity cm3/:		+	valve > Volt:	12
> 1000s.:		1		
5th speed 1/min:		1	Electr. shutoff:	
Charge press. hPa:		1	eccor. Silatori.	
KSB/AFB	1100	T	1st annual 1/min.	フフに
	42	T	1st speed 1/min:	
valve > Volt:	12	†	Del. quantity cm3/:	0.003.00
Shutoff		+	> 1000s.:	Note
electromagnet>Volt:		+	Shutoff	
Del. quantity cm3/:	62.068.0	+	electromagnet>volt:	_
> 1000s.:	(59.071.0)	+	KSB/AFB	
6th speed 1/min:		† † † † † †	valve > Volt:	12
Charge press. hPa:		1		
KSB/AFB	1100	1	Idle delivery:	
valve > Volt:	12	T	rate detrivery.	
	12	T	1-4	フラト
Shutoff	40		1st speed 1/min:	3/5
electromagnet>Volt:	12		>KSB/AFB	
Del. quantity cm3/:			valve > Volt:	12
> 1000s.:	(77.583.5)	+	Shutoff	
7th speed 1/min:	1100	+	electromagnet>Volt:	12
Charge press. hPa:	1100		Del. quantity cm3/:	
KSB/AFB		•		(6.016.0)
valve > Volt:	12		2nd speed 1/min:	
Shutoff	12		KSB/AFB	470
	13			43
electromagnet>Volt:			valve > Volt:	12
Del. quantity cm3/:			Shutoff	
	(79.586.5)		electromagnet>Volt:	
8th speed 1/min:	850	+	Del. quantity cm3/:	0.04.0
Charge press. hPa:	1100		> 1000s.:	
KSB/AFB		1		
valve > Volt:	12	1	Automatic starting	fuel delivery.
	12	Γ '	acomacic starting	ruet detivery.
Shutoff	10	T.	1 mt maged 4 /	2/0
electromagnet>Volt:			1st speed 1/min:	240
Del. quantity cm3/:			KSB/AFB	40
	(82.088.0)	1	valve > Volt:	12
9th speed 1/min:	550	+ :	Shutoff	

electromagnet>Volt: 12 Del. quantity cm3/: 80.0....
> 1000s.: -

2nd speed 1/min: 360

KSB/AFB

> Volt: 12 valve

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: ...80.0

1000s.: -

Shutoff electromagnet:

Cut-in

>min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: -KF mm: 5.2...5.4 mm: 1.2...1.5 MS1 mm: 3.5 SVS max. mm: 6.5 LDA stroke mm: 18.8...20.8 XK mm: 11.8...15.2 XL

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control

Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : HEP 3,7 A2 : 24.07.91 Edition replaces Calibrating oil : ISO 4113 : VE4/12F1300R314 Injection pump Type number : 0 460 424 044 Customer Part-No. : 403 053 607 Customer-specific information Customer : HERCULES : DT -3.7L IND. Engine Power KW: 58 1/min: 2600 Speed TEST BENCH REQUIREMENTS Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly> Opening | bar: 250.00...253.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6 x Wall>thickness : 2 x Length> mm: 840 Start of delivery Prestroke mm: 0.3 (from BDC): +-0.02(0.04)Indicator setting Piston stroke> mm: 1.0 Outlet> Injection-pump setting values Test specifications in parentheses

1/min: 900 Setting value mm: 1.60...2.00 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 900 Speed Setting value bar: 4.10...4.70 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: 1/min: 900 Del. quantity cm3/ > 1000s.: 70.50...71.50 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 4.01000s.: (4.5) Low-idle speed regulation Speed 1/min: 250 Del. quantity cm3/ > 1000s.: 2.00...4.00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0) Start: Speed 1/min: 100 Del. quantity cm3/: mind> 1000s.: 50.00 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1st speed 1/min: 750 mm: 0.60...1.40 TD travel mm: (0.30...1.70)electromagnet>Volt: 12 1/min: 900 2nd speed mm: 1.60...2.00 TD travel mm: (1.10...2.50) Shutoff electromagnet>Volt: 12 3rd speed 1/min: 1250 mm: 2.70...3.50 TD travel mm: (2.40...3.80) Shutoff electromagnet>Volt: 12

Timing-device travel

		+ 6th speed 1/min: 1100
Supply-pump pressur	e characteristic:	+ Shutoff
cappe, bamb by coon	o character for to	
		+ electromagnet>Volt: 12
1st speed 1/min:	500	+ Del. quantity cm3/: 70.0072.00
Supply-pump		+ > 1000s.: (67.5074.50)
	2.503.10	+ 7th speed 1/min: 900
	2,30,,,3,10	
Shutoff		+ Shutoff
electromagnet>Volt:	12	+ electromagnet>Volt: 12
	000	Del. quantity cm3/: 70.5071.50
	900	
Supply-pump		+ > 1000s.: (68.0074.00)
pressure> bar:	4.104.70	+
Shutoff		
	4.0	T
electromagnet>Volt:	12	+ Mech. shutoff:
3rd speed 1/min:	1250	+
Supply-pump		1st speed 1/min: 1400
auth ca hamb	5 50 (40	
pressure> bar:	5.506.10	+ Del. quantity cm3/: 0.003.00
Shutoff		+ > 1000s.: -
electromagnet>Volt:	12	+ Shutoff
e tecti omagnet vott.	12	
		+ electromagnet>volt: 12
Overflow quantity a	t overflow valve	+
•		+ Electr. shutoff:
1st speed 1/min:	500	2 cootii Silatoiii
	300	T 4
Shutoff		+ 1st speed 1/min: 250
electromagnet>Volt:	12	+ Del. quantity cm3/: 0.003.00
Overflow :		+ > 1000s.: -
quantity> cm3/10s:		+ Shutoff
2nd speed 1/min:	1300	+ electromagnet>volt: ~
Shutoff		1
	13	Dampon sot atv
electromagnet>Volt:		+ Damper set qty.:
Overflow :		+
quantity> cm3/10s:	(40153)	Automatic starting fuel delivery:
		1
N = 1 &	handlerer about	1-t 1/ 170
Delivery-quant. and	preakaway char.:	+ 1st speed 1/min: 130
		→ Shutoff
		+ electromagnet>Volt: 12
1st speed 1/min:	17.40	Del. quantity cm3/: 50.00110.00
	1400	T Det. quantity (1137. 30.00110.00
Shutoff		+ > 1000s.: -
electromagnet>Volt:	12	+
Del. quantity cm3/:		† 2nd speed 1/min: 250
> 1000s.:		+ Shutoff
2nd speed 1/min:	1400	+ electromagnet>Volt: 12
Shutoff		Del. quantity cm3/: 30.0090.00
	10	+ > 1000s.: -
electromagnet Volt:		T / 10003
Del. quantity cm3/:		+
> 1000s.:	-	+ Shutoff electromagnet:
3rd speed 1/min:		1
	1770	Cush 3-
Shutoff		+ Cut-in
electromagnet>Volt:	12	+ >min voltage : 10.0
Del. quantity cm3/:	0.0015.0	Rated voltage : 12.0
> 1000s.:		1
		T
4th speed 1/min:	1345	Mounting and assembly dimensions:
Shutoff		+
electromagnet>Volt:	12	Designation
Sal augustin and the	5/, 00 40 00	
Del. quantity cm3/:		K mm: -
	(51.0063.00)	├ KF mm: 5.05.4
oth speed 1/min:	1300	→ MS mm: 1.01.4
Shutoff		SVS max. mm: 2.7
	12	
electromagnet>Volt:		+ XK mm: 18.820.8
Del. quantity cm3/:	66.0069.00	+ XL mm: 11.815.2
	(64.5070.50)	+
	- -	T .



Remarks:

Supply-pump pressure BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1500 Speed Note inst. in remarks column Setting value bar: 6.30...6.90 KSB/AFB Test sheet valve Volt: 12 Edition : 15.03.96 Shutoff replaces electromagnet>Volt: 12 Calibrating oil : ISO-4113 Full-load del. w/out charge press.: : VE4/8F2400R677 Injection pump : 0 460 484 108 1/min: 1500 Type number Speed Customer Part-No. : Del. quantity cm3/ 1000s.: 31.5...32.5 > KSB/AFB Customer-specific information valve > Volt: 12 Shutoff Customer : VW electromagnet>Volt: 12 : 1.6 L cm3/: 2.5 Engine Dispersion 1000s.: (3.0) TEST BENCH REQUIREMENTS Low-idle speed regulation Overflow restricti: 1 463 456 303 1/min: 400 Speed Del. quantity cm3/ Calibrating-oil return>temp. > °C 1000s.: 13.0...17.0 with>thermometer> : 40.00...48.00 KSB/AFB Electronically> : 42.00...50.00 > Volt: 12 valve Shutoff Inlet press., bar : 0.30...0.40 electromagnet>Volt: 12 Del. quantity cm3/: 2.5 1000s.: (3.5) Calibrating nozzle-holder : 1 688 901 000 assembly> Full-load speed regulation Opening Pressure> bar: 144.00...150.00 Speed 1/min: 2550 Del. quantity cm3/ 1000s.: 16.0...22.0 Test inj. tubing : 1 680 750 017 KSB/AFB > Volt: 12 valve Outside diameter : 6.00 x Wall>thickness : 2.00 Shutoff electromagnet>Volt: 12 x Length> mm: 840 Start: Start of delivery Speed 1/min: 100 mm: -Prestroke (from BDC): -Del. quantity cm3/: 31.5...61.5 1000s.: 31.5 mind> Injection-pump setting values KSB/AFB > Volt: 12 Test specifications in parentheses Valve Shutoff Timing-device travel electromagnet>Volt: 12 Speed 1/min: 1500 Inspection-pump test specifications Setting value mm: 3.40...3.80 Test specifications in parentheses AFB/AFB Timing-device characteristic: Volt: 12 valve Shutoff

1st speed

TD travel

1/min: 600

mm: 1.20...2.40

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electromagnet>Volt: 12

> mm:	(0.802.80)	+	KSB/AFB	
KSB/AFB		1	valve > Volt:	12
valve > Volt:	_	1	Shutoff	· -
electromagnet>Volt:		1	electromagnet>Volt:	12
2nd speed 1/min:		1	Overflow :	55.60139.00
	1.402.20	1	quantity> cm3/10s:	
	(1.102.50)	1	quarterey? cm3/100:	(40.00154.00)
KSB/AFB	(11.101.121.30)	1	Delivery-quant. and	hreakaway char
valve > Volt:	12	1	vectively quarter and	bi cakaway chai .
Shutoff	12	1		
electromagnet>Volt:	12	1	1st speed 1/min:	2800
3rd speed 1/min:		1	KSB/AFB	2000
	3.403.80	\mathbf{I}	valve > Volt:	12
	(3.004.20)	Ι	Shutoff	12
KSB/AFB	(3.004.20)	Ι	electromagnet>Volt:	12
valve > Volt:	12	Ι	Del. quantity cm3/:	
Shutoff	16	I		(0.003.00)
electromagnet>Volt:	12	Ι	2nd speed 1/min:	
4th speed 1/min:		T	KSB/AFB	2000
	6.27.0	I	valve > Volt:	12
	(5.97.3)	T	Shutoff	14
KSB/AFB	(3.77.3)	T	electromagnet Volt:	12
valve > Volt:	12	T		
	12	T	Del. quantity cm3/: > 1000s.:	(3.013.0)
Shutoff	10	T		
electromagnet>Volt:	12	†	3rd speed 1/min:	2000
Simple mine mannin		†	KSB/AFB valve > Volt:	40
Supply-pump pressur	e characteristic:	T		12
1-1	400	†	Shutoff	12
1st speed 1/min:	000	†	electromagnet>Volt:	
Supply-pump	7 (0 / 20	†	Del. quantity cm3/:	
	3.604.20	†		(16.024.0)
KSB/AFB	42	†	4th speed 1/min:	2400
<pre>valve > Volt:</pre>	12	†	KSB/AFB	40
Shutoff	40	†	valve > Volt:	12
electromagnet>Volt:		†	Shutoff	40
2nd speed 1/min:	1500	†	electromagnet>Volt:	
Supply-pump	. 70	+	Del. quantity cm3/:	
	6.306.90	+		(27.031.0)
KSB/AFB	4.0	+	5th speed 1/min:	1500
valve > Volt:	12	+	KSB/AFB	4.0
Shutoff		+	valve > Volt:	12
electromagnet>Volt:		†	Shutoff	40
3rd speed 1/min:	2400	+	electromagnet>Volt:	
Supply-pump		†	Del. quantity cm3/:	
	9.009.60	†		(30.034.0)
KSB/AFB		†	6th speed 1/min:	600
valve > Volt:	12	†	KSB/AFB	4.0
Shutoff		+	valve > Volt:	12
electromagnet>Volt:	12	+	Shutoff	
		+	electromagnet>Volt:	
Overflow quantity at	t overflow valve	†	Del. quantity cm3/:	
		+	> 1000s.:	(22.528.5)
1st speed 1/min:	600	+		
KSB/AFB		+		
valve > Volt:	12	+		
Shutoff		+	Electr. shutoff:	
electromagnet>Volt:		+		
	44.4088.80	+	1st speed 1/min:	
quantity> cm3/10s:		+	Del. quantity cm3/:	
2nd speed 1/min:	2400	+	> 1000s.:	(0.003.00)

Shutoff	
electromagnet>volt	: -
KSB/AFB	. 43
valve > Volt	: 12
Idle delivery:	
1st speed 1/min >KSB/AFB	: 400
valve > Volt. Shutoff	: 12
electromagnet>Volt	: 12
Del. quantity cm3/ > 1000s. Dispersion cm3/	13.017.0
> 1000s.	(9.520.5)
Dispersion cm3/:	2.5
> 10005.	(5.5)
2nd speed 1/min: KSB/AFB	
valve > Volt: Shutoff	
electromagnet>Volt: Del. quantity cm3/ > 1000s.	12
Del. quantity cm3/:	24.030.0
> 1000S.	(21.552.5)
3rd speed 1/min:	1000
KSB/AFB valve > Volt:	. 12
<pre>valve > Volt: Shutoff</pre>	12
electromagnet>Volt:	12
Del. quantity cm3/:	0.03.0
> 1000s.:	_
Automatic starting	fuel delivery:
1st speed 1/min:	
1st speed 1/min: KSB/AFB	350
1st speed 1/min: KSB/AFB valve > Volt:	350
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt:	350 12 12
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt:	350 12 12
1st speed 1/min: KSB/AFB valve > Volt: Shutoff	350 12 12 32.042.0
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000S.: 2nd speed 1/min:	350 12 12 32.042.0
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/: > 1000s.: 2nd speed 1/min: KSB/AFB	350 12 12 32.042.0 -
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 -
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5 - 100
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5 - 100 12
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5 - 100 12
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5 - 100 12 12 232.5062.50
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5 - 100 12 12 232.5062.50
1st speed 1/min: KSB/AFB valve > Volt: Shutoff electromagnet>Volt: Del. quantity cm3/:	350 12 12 32.042.0 - 500 12 12 19.529.5 - 100 12 12 232.5062.50

>min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4 KF mm: 5.2...5.6 MS mm: 1.6...2.0 Ya mm: 39.4...41.4 Yb mm: 45.8...58.7

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

: 0 460 413 001 Part no. Pump designation : VE3/11F1250L163

Customer-spec. information : IVECO-FIAT Customer Motor : 8035,05,200

42.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

172 Tolerance bar

Test lines : 1 680 750 000

6.00 Outside diameter :

x inside diameter : 2.00 x length mm 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

2.7 Setting mm Tolerance mm 0.2 Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 800

Setting hPa 4.1 Tolerance hPa 0.3 Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

3.5

12

Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes :

Shutoff solenoid 12 Volt

IDLE SETTING

350 Rated speed rpm Del. quantity

cm3/1000 strokes : 23.0 Tolerance

cm3/1000 strokes :

2.0 Shutoff solenoid

Volt

Spread cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.

3.5

FULL-LOAD SPEED REGULATION

1400 Rated speed rpm Del. quantity

cm3/1000 strokes :

20.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid		+			
Volt	: 12	+	Check tolerance		
		+	ccm/10s	:	41.6
STARTING FUEL DEL	LIVERY	+	Shutoff solenoid		
		+	Volt	:	12
Rated speed rpm	: 100	+			
Del. quantity		+	Rated speed rpm	:	500
cm3/1000 strokes	: 105.0	+	Overflow quantity	/	
Tolerance		+	ccm/10s	:	63.8
cm3/1000 strokes	: 25.0	+	Tolerance		
Shutoff solenoid		+	ccm/10s	:	22.2
Volt	: 12	+			
		+	Check tolerance		
		+	ccm/10s	:	22.2
		+	Shutoff solenoid		
		+	Volt	:	12
		- +			
INJECTION-PUMP TE	ST SPECIFICATIONS	+	DELIVERY AND BREA	AKAWA	AY CHARACTERISTIC
		+			
TIMING DEVICE CHA	NRACTERISTIC	+	Rated speed rpm	:	1400
		+	Del. quantity		
Rated speed rpm		t	cm3/1000 strokes	:	20.0
Tolerance mm	: 0.4	+	Tolerance		
Check	0.7	†	cm3/1000 strokes	:	2.0
tolerance mm	: 0.7	†	Check tolerance		4.0
Shutoff solenoid	4.0	†	cm3/1000s.	:	6.0
Volt	: 12	†	Shutoff solenoid		40
	400	†	Volt	:	12
Rated speed rpm	: 600	†			4750
	4.3	†	Rated speed rpm	:	1350
SV travel mm	: 1.2	†	Del. quantity		CO. O
Tolerance mm	: 0.4	†	cm3/1000 strokes	:	50.0
Check	6 7	†	Tolerance		0.0
tolerance mm	: 0.7	†	cm3/1000 strokes	:	8.0
Shutoff solenoid	: 12	†	Check tolerance		10.0
Volt	; 12	T	cm3/1000S. Shutoff solenoid	:	10.0
CURRI V RUMB PRECE	URE CHARACTERISTIC	T	Volt		12
SUPPLY PUMP PRESS	ORE CHARACTERISTIC	T	VOCE	•	12
Rated speed rpm	: 1200	I	Rated speed rpm	:	1460
Supply pomp	: 1200	I	Del. quantity	•	1400
pressure bar	: 5.8	I	cm3/1000 strokes		1.5
Tolerance hPa	: 0.3	Ι	Tolerance	•	1.0
Shutoff solenoid	. 0.3	I	cm3/1000 strokes	•	1.5
Volt	: 12	I	Check tolerance	•	1.5
VOCE	. 12	I	cm3/1000s.		1.5
Rated speed rpm	: 500	I	Shutoff solenoid	•	1.5
Supply pomp	. 500	\perp	Volt	•	12
pressure bar	: 2.8	1	1000	•	'-
Tolerance hPa	: 0.3	1	Rated speed rpm	:	1250
Shutoff solenoid		1	Del. quantity	•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Volt	: 12	1	cm3/1000 strokes	:	70.5
	•	1	Tolerance	٠	· = • •
OVERFLOW QUANTITY		1	cm3/1000 strokes	:	1.5
		1	Check tolerance	•	: E #
Rated speed rpm	: 1250	1	cm3/1000s.	:	3.5
Overflow quantity		1	Shutoff solenoid		
ccm/10s	: 97.2	1	Volt	:	12
Tolerance		1	-		
ccm/10s	: 41.6	+	Rated speed rpm	:	500
- -		•	•		

Dal minatati		1	
Del. quantity cm3/1000 strokes Tolerance	: 60.5	Ī	
cm3/1000 strokes Check tolerance	: 1.5	$\frac{1}{2}$	
cm3/1000s. Shutoff solenoid	: 3.5	T START TRANSITI	ON
Volt	: 12	Rated speed rp Del. quantity	
Rated speed rpm Del. quantity	: 750	cm3/1000 strok Tolerance	
cm3/1000 strokes Tolerance	: 69.0	cm3/1000 strok + Shutoff soleno	
cm3/1000 strokes Check tolerance		+ Volt	: 12
cm3/1000S. Shutoff solenoid	: 3.0	Rated speed rp	m : 150
Volt	: 12	+ Del. quantity - cm3/1000 strok	es : 115.0
ELECTR CULTOFF		Tolerance cm3/1000 strok Shutoff soleno	
ELECTR. SHUTOFF CONTROL LEVER, ID	DLE STOP	+ Volt	: 12
Rated speed rpm Del. quantity	: 350	ASSEMBLY AND A	DJUSTMENT DIMENSIONS
cm3/1000 strokes Tolerance	: 1.5	Dimension K mm	
cm3/1000 strokes Check tolerance	: 1.5	† Dimension KF m † Tolerance mm	•
cm3/1000s. Spread	: 1.5	Dimension MS marks Tolerance mm	π : 1,6 : +-0,2
cm3/1000 strokes		‡	
FULL-LOAD STOP CO		CONTROL LEVER	POSITION
Rated speed rpm Del. quantity		+ SET +	
cm3/1000 strokes Tolerance		Control lever	. 77.0. 70.0
cm3/1000 strokes Spread		+ position YA mm + Control lever	: 37,939,9
cm3/1000 strokes Check tolerance cm3/1000s.	: 1.5	position YB mm	: 44,549,5
Spread cm3/1000 strokes		<u> </u>	
IDLE DELIVERY	. 5.0	End of test-spe	ecification sheet
Rated speed rpm	: 475		
Del. quantity cm3/1000 strokes		<u> </u>	
Tolerance cm3/1000 strokes	: 1.5	 	
Check tolerance cm3/1000s.	: 1.5	+	
Shutoff solenoid Volt	: 12	+	
		+	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

: 0 460 413 002 Part no. Pump designation: VE3/11F1250L163-1

Customer-spec. information : IVECO-FIAT Customer Motor : 8035.06.200 Power KW 38.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 1 Tolerance °C

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

172 bar Tolerance bar

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840 :

REMARKS

BEGINNING OF DELIVERY

Prestroke

E09

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1000 Rated speed rpm

Setting mm 3.0 Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000

Setting hPa 6.0 Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

750 Rated speed rpm Del. quantity

65.5 cm3/1000 strokes :

Tolerance cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.5 Shutoff solenoid

12 Volt

IDLE SETTING

Rated speed rpm 400

Del. quantity cm3/1000 strokes :

17.5 Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

12 Volt Spread

cm3/1000 strokes : 3.5 Check tolerance

cm3/1000s. 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm 1350

Del. quantity

cm3/1000 strokes : 45.0

Tolerance	2.2	+ Tolerance
cm3/1000 strokes Shutoff solenoid	: 2.0	ccm/10s : 41.6
Volt	: 12	Check tolerance
	7. (75)	+ ccm/10s : 41.6
STARTING FUEL DEL	.IVERY	+ Shutoff solenoid + Volt : 12
Rated speed rpm	: 100	1
Del. quantity	400	Rated speed rpm : 500
cm3/1000 strokes Tolerance	: 105.0	Overflow quantity ccm/10s : 63.8
cm3/1000 strokes	: 25.0	Tolerance . 65.8
Shutoff solenoid	4.0	- ccm/10s : 22.2
Volt	: 12	+ Check tolerance
		+ ccm/10s : 22.2
		+ Shutoff solenoid
		† Volt : 12
INJECTION-PUMP TE	ST SPECIFICATIONS	T DELIVERY AND BREAKAWAY CHARACTERISTIC
		4750
TIMING DEVICE CHA	RACIERISTIC	+ Rated speed rpm : 1350 + Del. quantity
Rated speed rpm	: 1250	cm3/1000 strokes : 45.0
Tolerance mm	: 0.4	+ Tolerance
Check tolerance mm	: 0.7	+ cm3/1000 strokes : 2.0 + Check tolerance
Shutoff solenoid		+ cm3/1000s. : 6.0
Volt	: 12	+ Shutoff solenoid
Rated speed rpm	: 800	+ Volt : 12
		Rated speed rpm : 1400
SV travel mm	: 1.5 : 0.4	+ Del. quantity + cm3/1000 strokes : 10.0
Tolerance mm Check	: 0.4	+ cm3/1000 strokes : 10.0 + Check tolerance
tolerance mm	: 0.7	+ cm3/1000s. : 10.0
Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt : 12
VOCC	. 12	+
SUPPLY PUMP PRESSU	URE CHARACTERISTIC	Rated speed rpm : 1450
Rated speed rpm	: 1250	+ Del. quantity + cm3/1000 strokes : 1.5
Supply pomp		† Tolerance
pressure bar Tolerance hPa	: 7.1 : 0.3	cm3/1000 strokes : 1.5 Check tolerance
Shutoff solenoid	; 0.3	cm3/1000s. : 1.5
Volt	: 12	- Shutoff solenoid
Rated speed rpm	: 500	† Volt : 12
Supply pomp	. 200	Rated speed rpm : 1250
pressure bar	: 3.7	Del. quantity
Tolerance hPa Shutoff solenoid	: 0.3	+ cm3/1000 strokes : 65.0 + Tolerance
Volt	: 12	+ cm3/1000 strokes : 1.5
OVERELOW OURNITTY		+ Check tolerance + cm3/1000s. : 3.0
OVERFLOW QUANTITY		+ Shutoff solenoid
Rated speed rpm	: 1250	+ Volt : 12
Overflow quantity ccm/10s	: 97.2	+ Rated speed rpm : 500
CCIII/ 105	. 71.C	T water speed (bill . 300

Del. quantity cm3/1000 strokes		58.0	•	‡	
Tolerance	:	1.5		Ì	
Check tolerance cm3/1000s.	•	3.0		<u> </u>	TA
Shutoff solenoid		12		+	at
	•	750		+ D	el m3
Rated speed rpm Del. quantity		65.5		} ⊤	ol
cm3/1000 strokes Tolerance	:			+ s	m3 hu
cm3/1000 strokes Check tolerance	:	0.5		† V	οl·
cm3/1000S. Shutoff solenoid	:	3.0	• •	İ D	at
Volt	:	12		1	el
	•	, -	-	1	m3.
			-		٥l
EL 5070 01117055					m3
ELECTR. SHUTOFF CONTROL LEVER, ID	l F	STOP	- -		hu ol
CONTROL LEVERY 10		3107	•	1 "	
Rated speed rpm Del. quantity	;	400			SSI
cm3/1000 strokes Tolerance	:	1.5	•	+	im
cm3/1000 strokes	;	1.5	-	D.	im ol
Check tolerance cm3/1000s.	:	1.5	-	- D.	im
Spread cm3/1000 strokes	:	5.0	-	T '	ol
FULL-LOAD STOP CO	NTR	OL LEVER	-	+	
Rated speed rpm	:	400	-	•	ON ⁻
Del. quantity cm3/1000 strokes	:	1.5	- -	 	
Tolerance cm3/1000 strokes	:	1.5	7	3	ont
Spread cm3/1000 strokes	:	5.0		- Co	ont
Check tolerance cm3/1000s.	•	1.5	_	1	os:
Spread cm3/1000 strokes		5.0	- -	_	
IDLE DELIVERY	•	3.0	-	- Er	nd
TOLL OLLIVERI			_	<u> </u>	ľ
Rated speed rpm Del. quantity	:	475		-	
cm3/1000 strokes Tolerance	:	1.5	_	_	
cm3/1000 strokes	:	1.5		_	
Check tolerance cm3/1000s.	:	1.5	1		
Shutoff solenoid Volt	:	12	-	-	

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 150
Del. quantity
cm3/1000 strokes : 115.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

/olt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : Dimension KF mm : 5,2
Tolerance mm : +-0,2
Dimension MS mm : 1,6
Tolerance mm : +-0,2

CONTROL LEVER POSITION

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 44,0..49,0

End of test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16,10,95 Test oil : ISO 4113

: 0 460 413 004 Part no. Pump designation: VE3/11F1250L163-2

Customer-spec, information Customer : IVECO-FIAT Motor : 8035,06,220 Power KW 33.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

172 Tolerance bar

: 1 680 750 000 Test Lines

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm 3.0 Tolerance mm 0.2 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

800 Rated speed rpm

5.0 Setting hPa Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 800 Del. quantity

cm3/1000 strokes : 59.5 Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 3.5 Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm 375 Del. quantity

cm3/1000 strokes : 12.5

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt

12 Spread 3.5

cm3/1000 strokes : Check tolerance

cm3/1000s. 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm 1400

Del. quantity

cm3/1000 strokes : 15.0

Tolerance cm3/1000 strokes		3.0	†	Tolerance ccm/10s		41.6
Shutoff solenoid	•		Į	CCIII/ TOS	•	41.0
Volt	:	12	+	Check tolerance		41.6
STARTING FUEL DEL	IVER	RY	1	ccm/10s Shutoff solenoid	•	41.0
			+	Volt	:	12
Rated speed rpm Del. quantity	:	100	1	Rated speed rpm	:	500
cm3/1000 strokes	:	105.0	+	Overflow quantity		
Tolerance cm3/1000 strokes		25.0	†	ccm/10s	:	63.8
Shutoff solenoid	:	25.0	I	Tolerance ccm/10s	:	22.2
Volt	:	12	+	-t		
			1	Check tolerance ccm/10s	:	22.2
			+	Shutoff solenoid	•	
			†	Volt	:	12
INJECTION-PUMP TE	ST S	PECIFICATIONS	Ţ	DELIVERY AND BREA	KAW.	AY CHARACTERISTIC
			+	5		4/00
TIMING DEVICE CHA	RACI	EKISTIC	1	Rated speed rpm Del. quantity	:	1400
Rated speed rpm	:	1000	+	cm3/1000 strokes	:	15.0
Tolerance mm Check	:	0.4	<u> </u>	Tolerance cm3/1000 strokes	:	3.0
tolerance mm	:	0.7	Ŧ	Check tolerance	•	
Shutoff solenoid		12	+	cm3/1000S. Shutoff solenoid	:	6.0
Volt	•	12	I	Volt	:	12
Rated speed rpm	:	600	+	Data dansa dansa		4750
SV travel mm	•	1.2	Ī	Rated speed rpm Del. quantity	:	1350
Tolerance mm	:	0.4	+	cm3/1000 strokes	:	45.0
Check tolerance mm	•	0.7	<u> </u>	Tolerance cm3/1000 strokes	:	8.0
Shutoff solenoid	•	0.7	Ţ	Check tolerance	•	
Volt	:	12	†	cm3/1000s. Shutoff solenoid	:	10.0
SUPPLY PUMP PRESS	URE	CHARACTERISTIC	Ī	Volt	:	12
			+			
Rated speed rpm Supply pomp	:	1250	‡	Rated speed rpm Del. quantity	:	1450
pressure bar	:	7.0	+	cm3/1000 strokes	:	1.5
Tolerance hPa Shutoff solenoid	:	0.3	Í	Tolerance cm3/1000 strokes	:	1.5
Volt	:	12	Ŧ	Check tolerance	•	
Datad award was	_	E00	+	cm3/1000s.	:	1.5
Rated speed rpm Supply pomp	:	500	I	Shutoff solenoid Volt	:	12
pressure bar	:	3.5	+			4050
Tolerance hPa Shutoff solenoid	:	0.3	‡	Rated speed rpm Del. quantity	:	1250
Volt	:	12	+	cm3/1000 strokes	:	52.5
OVERFLOW QUANTITY			<u> </u>	Tolerance cm3/1000 strokes		1.5
OVERLEDM MONNITH			Ţ	Check tolerance	•	
Rated speed rpm		1250	+	cm3/1000s.	:	3.5
Overflow quantity ccm/10s	:	97.2	‡	Shutoff solenoid Volt	:	12
	•		'	· * * *	-	_

		+ Shutoff solenoid
Rated speed rpm Del. quantity	: 500	volt : 12
cm3/1000 strokes Tolerance	: 55.5	Rated speed rpm : 425 Del. quantity
cm3/1000 strokes Check tolerance	: 1.5	cm3/1000 strokes : 5.0 Tolerance
cm3/1000s. Shutoff solenoid	: 3.5	cm3/1000 strokes : 3.0 Check tolerance
Volt	: 12	cm3/1000s. : 4.0 Shutoff solenoid
Rated speed rpm Del. quantity	: 800	Volt : 12
cm3/1000 strokes Tolerance	: 59.5	1
cm3/1000 strokes Check tolerance	: 0.5	<u>†</u>
cm3/1000S. Shutoff solenoid	: 3.5	START TRANSITION
Volt	: 12	+
		+ Rated speed rpm : 250 + Del. quantity
ELECTR. SHUTOFF		+ cm3/1000 strokes : 35.0 Tolerance
CONTROL LEVER, ID	DLE STOP	+ cm3/1000 strokes : 15.0 + Shutoff solenoid
Rated speed rpm Del. quantity		+ Volt : 12
cm3/1000 strokes Tolerance	: 1.5	Rated speed rpm : 150
cm3/1000 strokes Check tolerance	: 1.5	Del. quantity
cm3/1000S. Spread	: 1.5	Tolerance cm3/1000 strokes : 25.0
cm3/1000 strokes	: 5.0	Shutoff solenoid Volt : 12
FULL-LOAD STOP CO	NTROL LEVER	
Rated speed rpm Del. quantity	: 375	ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes Tolerance	: 1.5	Dimension K mm : - Dimension KF mm : 5,5
cm3/1000 strokes Spread	: 1.5	Tolerance mm : +-0,2 Dimension MS mm : 1,6
cm3/1000 strokes Check tolerance	: 5.0	Tolerance mm : +-0,2
cm3/1000s. Spread	: 1.5	<u> </u>
cm3/1000 strokes	: 5.0	CONTROL LEVER POSITION SET
IDLE DELIVERY		1
Rated speed rpm Del. quantity	: 500	Control lever position YA mm : 37,939,9
cm3/1000 strokes Tolerance	: 1.5	Control lever
cm3/1000 strokes Check tolerance	: 1.5	position YB mm : 46,051,0
cm3/1000s.	: 1.5	<u> </u>
		Т

End of test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.03.95 Test oil : ISO 4113

: 0 460 413 005 Part no. Pump designation: VE3/11F1200L163-3

Customer-spec. information : IVECO-FIAT Customer : 8035.05.265 Motor Power KW 35.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

172 bar Tolerance bar

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm 3.4 Tolerance mm 0.2 Shutoff solenoid

Volt

24

SUPPLY PUMP PRESSURE

Rated speed rpm 800

Setting hPa 4.5 Tolerance hPa 0.3 Shutoff solenoid

Volt 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800 Del. quantity

cm3/1000 strokes : 63.0 Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 3.5 Shutoff solenoid

Volt

24

IDLE SETTING

350 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt

Spread

3.5 cm3/1000 strokes :

Check tolerance

cm3/1000s. 3.5

24

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1350

Del. quantity

cm3/1000 strokes : 18.0

Tolerance cm3/1000 strokes	: 3.0		Tolerance ccm/10s	:	41.6	
Shutoff solenoid Volt	: 24		Check tolerance	:	41.6	
STARTING FUEL DEL	IVERY	1	Shutoff solenoid Volt	:	24	
Rated speed rpm Del. quantity	: 100	+	Rated speed rpm	:	500	
cm3/1000 strokes Tolerance	: 115.0	+ (Overflow quantity		63.8	
cm3/1000 strokes Shutoff solenoid	: 25.0		Tolerance ccm/10s	:	22.2	
Volt	: 24	+	Check tolerance			
		+ (ccm/10s Shutoff solenoid	:	22.2	
•			Volt	:	24	
INJECTION-PUMP TE	ST SPECIFICATIONS	ļ [DELIVERY AND BREAK	KAWA	Y CHARACTERISTI	.C
TIMING DEVICE CHA	RACTERISTIC		Rated speed rpm Del. quantity	:	1350	
Rated speed rpm Tolerance mm		+ 0	cm3/1000 strokes Folerance	:	18.0	
Check tolerance mm	: 0.7	+ 0	cm3/1000 strokes Check tolerance	:	3.0	
Shutoff solenoid Volt	: 24	+ 0	cm3/1000s. Shutoff solenoid	:	6.0	
Rated speed rpm		1	/olt	:	24	
SV travel mm	: 1.0		Rated speed rpm Del. quantity	:	1300	
Tolerance mm Check	: 0.4	+ 0	cm3/1000 strokes Folerance	:	41.0	
tolerance mm Shutoff solenoid	: 0.7	+ 0	cm3/1000 strokes Check tolerance	:	8.0	
Volt	: 24	+ 0	cm3/1000s. Shutoff solenoid	:	10.0	
SUPPLY PUMP PRESS	URE CHARACTERISTIC		/olt	:	24	
Rated speed rpm Supply pomp	: 1200		Rated speed rpm Del. quantity	:	1400	
pressure bar Tolerance hPa	: 6.3 : 0.3) c	cm3/1000 strokes olerance	:	1.5	
Shutoff solenoid Volt	: 24		cm3/1000 strokes Check tolerance	:	1.5	
Rated speed rpm	<i>:</i> 500		m3/1000s. Shutoff solenoid	:	1.5	
Supply pomp pressure bar	: 3.2		/olt	:	24	
Tolerance hPa Shutoff solenoid	: 0.3		Rated speed rpm Del. quantity	:	1250	
Volt	: 24	+ c	:m3/1000 strokes olerance	:	57.5	
OVERFLOW QUANTITY		+ c	m3/1000 strokes heck tolerance	:	1.5	
Rated speed rpm Overflow quantity	: 1250	+ c	m3/1000s. Thutoff solenoid	:	3.5	
ccm/10s	: 97.2		olt	:	24	

Det. quantity cm3/1000 strokes : 61.0 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 3.5 Shutoff solenoid volt : 24 Rated speed rpm : 800 Det. quantity cm3/1000 strokes : 63.0 Tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000 strokes : 0.5 Shutoff solenoid volt : 24 Rated speed rpm : 250 Det. quantity cm3/1000 strokes : 0.5 Shutoff solenoid volt : 24 Rated speed rpm : 150 Det. quantity cm3/1000 strokes : 25.0 Shutoff solenoid volt : 24 Rated speed rpm : 150 Det. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Dimension K mm : Dimension K mm : Dimension K mm : Dimension K mm : Dimension K mm : Dimension K mm : Dimension K mm : 1.0 Dimension M mm : 1	Dated aread non		500	+	Shutoff solenoid	. 2/	
Tolerance cn3/1000 strokes : 1.5 Check tolerance cn3/1000s. : 3.5 Shutoff solenoid Volt : 24 Rated speed rpm : 800 pel. quantity cn3/1000 strokes : 63.0 Tolerance cn3/1000 strokes : 0.5 Check tolerance cn3/1000 strokes : 0.5 Shutoff solenoid Volt : 24 Rated speed rpm : 250 pel. quantity cn3/1000 strokes : 0.5 Check tolerance cn3/1000 strokes : 0.5 Shutoff solenoid Volt : 24 Rated speed rpm : 150 pel. quantity cn3/1000 strokes : 1.5 Tolerance cn3/1000 strokes : 1.5 Tolerance cn3/1000 strokes : 1.5 Tolerance cn3/1000 strokes : 1.5 Dimension K mm : - Dimension				‡	Volt	: 24	
Check tolerance cm3/1000S: 3.5 Shutoff solenoid Volt : 24 Rated speed rpm : 800	Tolerance			‡			
Shutoff solenoid Volt : 24 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 63.0 Tolerance cm3/1000S. : 3.0 Shutoff solenoid Volt : 24 Rated speed rpm : 250 Del. quantity cm3/1000S strokes : 0.5 Check tolerance cm3/1000S. : 3.0 Shutoff solenoid Volt : 24 Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 125.0 Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid Volt : 24 Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread cm3/1000 strokes : 5.0 FULL—LOAD STOP CONTROL LEVER Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 FULL—LOAD STOP CONTROL LEVER Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 5.0 CONTROL LEVER POSITION SET Control lever position YA mm : 37,939,9 Tolerance cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3		:	1.5	‡			
Rated speed rpm : 800 Pel. quantity		:	3.5	1	START TRANSITION		
Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 63.0 Tolerance cm3/1000 strokes : 0.5 Check tolerance cm3/1000s : 3.0 Shutoff solenoid Volt : 24 Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000s : 1.5 Spread cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5		:	24	1		• 250	
Cm3/1000 strokes : 63.0		:	800	+	Del. quantity		
Cm3/1000 strokes : 0.5 Check tolerance cm3/1000s : 3.0 Shutoff solenoid Volt : 24 Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 25.0 Shutoff solenoid Volt : 24 Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 25.0 Shutoff solenoid Volt : 24 Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 25.0 Shutoff solenoid Volt : 24 Rated speed rpm : 150 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Spread Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance mm : +0,2 FULL-LOAD STOP CONTROL LEVER Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5	cm3/1000 strokes	:	63.0	Ŧ	Tolerance		
cm3/1000s. : 3.0 Shutoff solenoid 24 Volt : 24 ELECTR. SHUTOFF cm3/1000 strokes : 125.0 CONTROL LEVER, IDLE STOP cm3/1000 strokes : 25.0 Rated speed rpm : 350 shutoff solenoid Volt : 24 Rated speed rpm : 350 cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 5.0 Cm3/1000 strokes : 5.0 5.0 FULL-LOAD STOP CONTROL LEVER Tolerance mm : +0,2 Rated speed rpm : 350 CONTROL LEVER POSITION Rated speed rpm : 350 CONTROL LEVER POSITION SET Control Lever position YA mm : 37,939,9 cm3/1000 strokes : 1.5 control lever position YA mm : 37,939,9 cm3/1000 strokes : 5.0 control lever position YA mm : 34,549,5 Spread cm3/1000 strokes : 5.0 control lever position YB mm : 44,549,5 IDLE DELIVERY End of test-specification sheet Rated speed rpm : 420 End of test-specification sheet Rated speed rpm : 420 End of test-specification sheet	cm3/1000 strokes	:	0.5	Ŧ	Shutoff solenoid		
Volt : 24 ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 25.0 Shutoff solenoid Volt : 24 ASSEMBLY AND ADJUSTMENT DIMENSION Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 FULL-LOAD STOP CONTROL LEVER Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5	cm3/1000S.	:	3.0	Í	Volt	: 24	
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Rated speed rpm : 350 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance	cm3/1000 strokes	:	5.0	1			
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Cm3/1000 strokes: 5.0 Check tolerance cm3/1000s.: 1.5 Spread cm3/1000 strokes: 5.0 IDLE DELIVERY Rated speed rpm: 420 Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 strokes: 1.5 Check tolerance	cm3/1000 strokes	:	1.5	Ŧ		. 77 0 70 0	
cm3/1000s. : 1.5 Spread cm3/1000 strokes : 5.0 IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance	cm3/1000 strokes	:	5.0	Ŧ	•	: 37,939,9	
IDLE DELIVERY Rated speed rpm : 420 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance	cm3/1000s.	:	1.5	‡		: 44,549,5	
Rated speed rpm : 420 Del. quantity		:	5.0	‡			
Rated speed rpm : 420 Del. quantity	IDLE DELIVERY			‡	End of test-speci	fication sheet	
cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance +		:	420	Ì	2		
cm3/1000 strokes : 1.5 + Check tolerance +	cm3/1000 strokes	:	1.5	7			
	cm3/1000 strokes	:	1.5	Ŧ			
CM3/10003. : 1.3	cm3/1000s.	:	1.5	Ŧ			

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.04.95 Edition : ISO 4113 Test oil

: 0 460 414 013 Part no. Pump designation: VE4/11F1250L164

Customer-spec. information

Customer Motor

: IVECO-FIAT : 8045.05,200

Power KW

58.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance *C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35Tolerance bar 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

172 Tolerance bar

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 800

Setting mm 3.2 Tolerance mm 0.2 Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 800

Setting hPa 5.4 : Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 750 Del. quantity

cm3/1000 strokes : 69.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.5

Shutoff solenoid

12 Volt

IDLE SETTING

350 Rated speed rpm Del. quantity

23.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes 2.0 Shutoff solenoid

12 Volt Spread

cm3/1000 strokes : 3.5 Check tolerance

cm3/1000s. 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm 1350

Del. quantity

cm3/1000 strokes : 44.0

Tolerance cm3/1000 strokes	: 2.0	‡	Overflow quantity ccm/10s	, :	97.2	
Shutoff solenoid Volt	: 12	‡	Tolerance ccm/10s	:	41.6	
STARTING FUEL DEL	IVERY	‡	Check tolerance			
		+	ccm/10s	:	41.6	
Rated speed rpm Del. quantity	: 100	‡	Shutoff solenoid Volt	:	12	
cm3/1000 strokes	: 115.0	+		•		
Tolerance cm3/1000 strokes	: 25.0	1	Rated speed rpm Overflow quantity	, : ,	500	
Shutoff solenoid	: 12	+	ccm/10s	:	63.8	
Volt	: 12	Ŧ	Tolerance ccm/10s	:	22.2	
		‡	Check tolerance			
		+	ccm/10s	:	22.2	
INJECTION-PUMP TE	ST SPECIFICATIONS		Shutoff solenoid Volt	:	12	
		+				
TIMING DEVICE CHA	RACTERISTIC	‡	DELIVERY AND BREA	KAWA	AY CHARACTE	RISTIC
Rated speed rpm	: 1250	+	Rated speed rpm	:	1350	
SV travel mm	: 7.2	‡	Del. quantity cm3/1000 strokes	:	44.C	
Tolerance mm	: 0.4	+	Tolerance		2.0	
Check tolerance mm	: 0.7	‡	cm3/1000 strokes Check tolerance	:	2.0	
Shutoff solenoid Volt	: 12	†	cm3/1000s. Shutoff solenoid	:	6.0	
VOCE	: 12	Ŧ	Volt	:	12	
Rated speed rpm	: 500	<u>†</u>	Rated speed rpm	:	1400	
SV travel mm	: 0.8	+	Del. quantity			
Tolerance mm Check	: 0.4	1	cm3/1000 strokes Check tolerance	:	12.0	
tolerance mm	: 0.7	+	cm3/1000s.	:	8.0	
Shutoff solenoid Volt	: 12	1	Shutoff solenoid Volt	:	12	
		+				
SUPPLY PUMP PRESSI	URE CHARACTERISTIC	‡	Rated speed rpm Del. quantity	:	1450	
Rated speed rpm	: 1250	+	cm3/1000 strokes Tolerance	:	1.5	
Supply pomp pressure bar	: 7.3	Ţ	cm3/1000 strokes	:	1.5	
Tolerance hPa Shutoff solenoid	: 0.3	<u>†</u>	Check tolerance cm3/1000s.		1.5	
Volt	: 12	Ŧ	Shutoff solenoid	•		
Rated speed rpm	: 500	‡	Volt	:	12	
Supply pomp		+	Rated speed rpm	:	1250	
pressure bar Tolerance hPa	: 3.9 : 0.3	‡	Del. quantity cm3/1000 strokes	:	65.5	
Shutoff solenoid		+	Tolerance			
Volt	: 12	‡	cm3/1000 strokes Check tolerance	:	1.5	
OVERFLOW QUANTITY		+	cm3/1000s.	:	3.5	
Rated speed rpm	: 1250	‡	Shutoff solenoid Volt	:	12	

Rated speed rpm	: 500	+ Shutoff solenoid + Volt : 12
Del. quantity cm3/1000 strokes	: 62.5	†
Tolerance cm3/1000 strokes	: 1.5	‡
Check tolerance cm3/1000s. Shutoff solenoid	: 3.5	CTART TRANSPITAN
Volt	: 12	+ START TRANSITION + Rated speed rpm : 250
Rated speed rpm Del. quantity	: 750	Del. quantity cm3/1000 strokes : 57.0
cm3/1000 strokes Tolerance	: 69.0	Tolerance : 37.0 cm3/1000 strokes : 37.0 cm3/1000 strokes : 10.0
cm3/1000 strokes	: 0.5	+ Shutoff solenoid
Check tolerance cm3/1000S.	: 3.0	+ Volt : 12
Shutoff solenoid Volt	: 12	Rated speed rpm : 150
		Del. quantity cm3/1000 strokes : 115.0
ELECTR. SHUTOFF	V. F. 6700	Tolerance cm3/1000 strokes : 25.0
CONTROL LEVER, ID		+ Shutoff solenoid + Volt : 12
Rated speed rpm Del. quantity		
cm3/1000 strokes Tolerance		ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes Check tolerance	: 1.5	+ Dimension K mm : - + Dimension KF mm : 5,5
cm3/1000S. Spread	: 1.5	Tolerance mm : +-0,2 Dimension MS mm : 1,6
cm3/1000 strokes	: 5.0	Tolerance mm : +0,2
FULL-LOAD STOP CO	NTROL LEVER	<u> </u>
Rated speed rpm Del. quantity	: 350	CONTROL LEVER POSITION SET
cm3/1000 strokes Tolerance	: 1.5	1
cm3/1000 strokes Spread	: 1.5	Control lever position YA mm : 37,939,9
cm3/1000 strokes Check tolerance	: 5.0	- Control lever
cm3/1000s. Spread	: 1.5	position YB mm : 44,149,1
cm3/1000 strokes	: 5.0	
IDLE DELIVERY		End of test-specification sheet
Rated speed rpm Del. quantity	: 500	The of test specification sheet
cm3/1000 strokes Tolerance	: 1.5	<u> </u>
cm3/1000 strokes Check tolerance	: 1.5	<u> </u>
cm3/1000s.	: 1.5	<u> </u>

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 21.04.95

Test oil

: ISO 4113

Part no.

: 0 460 414 015

Pump designation: VE4/11F1250L164-1

Customer-spec. information

Customer

: IVECO-FIAT

Motor

: 8045.06.200

Power KW

53.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C

45

Tolerance °C

Overflow

restriction mm

0.55

Inlet press. bar :

0.35

Tolerance bar

0.05

Test nozzle holde

assembly

: 1 688 901 020

Opening pressure

172

Tolerance bar

Test lines : 1 680 750 000

6.00

Outside diameter :

x inside diameter:

2.00

x length mm

840

REMARKS

BEGINNING OF DELIVERY

Prestroke

E22

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm

: +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm :

800

Setting mm

2.1

Tolerance mm

Shutoff solenoid

0.2

Volt

12

SUPPLY PUMP PRESSURE

Rated speed rpm :

800

Setting hPa

4.0

Tolerance hPa Shutoff solenoid 0.3

Volt

12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm

800

Del. quantity cm3/1000 strokes :

67.5

Tolerance

cm3/1000 strokes :

0.5

Spread

cm3/1000 strokes :

4.0

Shutoff solenoid

Volt

12

IDLE SETTING

Rated speed rpm :

350

Del. quantity

25.0

cm3/1000 strokes : Tolerance

cm3/1000 strokes :

2.0

12

Volt

Shutoff solenoid

Spread

cm3/1000 strokes :

3.5

Check tolerance cm3/1000s.

3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm

1365

Del. quantity

cm3/1000 strokes :

32.0

Tolerance			+ Supply pomp	
cm3/1000 strokes	:	3.0	+ pressure bar : 3.2	
Shutoff solenoid Volt	•	12	+ Tolerance hPa : 0.3 + Shutoff solenoid	
10(1	•	, _	+ Volt : 12	
STARTING FUEL DEL	IVE	RY	+	
Dated and down	_	100	+ OVERFLOW QUANTITY	
Rated speed rpm Del. quantity	:	100	Rated speed rpm : 1250	
cm3/1000 strokes	:	115.0	+ Overflow quantity	
Tolerance		25.0	+ ccm/10s : 97.2	
cm3/1000 strokes Shutoff solenoid	:	25.0	+ Tolerance + ccm/10s : 41.6	
Volt	:	12	T CCIII/ 10S . 41.0	
		_	+ Check tolerance	
			+ ccm/10s : 41.5	
			+ Shutoff solenoid + Volt : 12	
INJECTION-PUMP TE	ST	SPECIFICATI		
TIMENO DELICE CUA	DAC.	TEDICTIC	+ Overflow quantity + ccm/10s : 63.8	
TIMING DEVICE CHA	IKAL	IEKISIIC	+ Tolerance	
Rated speed rpm	:	1100	+ ccm/10s : 22.2	
			+	
SV travel mm	:	5.2 0.4	+ Check tolerance + ccm/10s : 22.2	
Tolerance mm Check	•	0.4	Shutoff solenoid	
tolerance mm	:	0.7	+ Volt : 12	
Shutoff solenoid		42	THE THEORY AND DESIGNATION OF THE TOTAL	_
Volt	:	12	† DELIVERY AND BREAKAWAY CHARACTERISTI	C
			47.7	
Rated speed rpm	:	600	+ Rated speed rpm : 1365	
Rated speed rpm	:		+ Del. quantity	
SV travel mm	:	0.5	Del. quantity cm3/1000 strokes : 32.0	
SV travel mm Tolerance mm	:		Del. quantity cm3/1000 strokes : 32.0 Tolerance	
SV travel mm	: :	0.5	Del. quantity cm3/1000 strokes : 32.0	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	0.5 0.3 0.6	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0	
SV travel mm Tolerance mm Check tolerance mm	:	0.5 0.3	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	:	0.5 0.3 0.6 12	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	:	0.5 0.3 0.6 12 1250	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm	:	0.5 0.3 0.6 12 1250 5.7	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm	:	0.5 0.3 0.6 12 1250	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm	:	0.5 0.3 0.6 12 1250 5.7	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	0.5 0.3 0.6 12 1250 5.7 0.4 0.7	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	:	0.5 0.3 0.6 12 1250 5.7 0.4	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERIS	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12 TIC Rated speed rpm : 1430 Del. quantity	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUK. PRESS Rated speed rpm	: : : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12 TIC Rated speed rpm : 1430 Del. quantity cm3/1000 strokes : 1.5	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUF. PRESS Rated speed rpm Supply pomp	: : : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERIS	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12 TIC Rated speed rpm : 1430 Del. quantity cm3/1000 strokes : 1.5 Tolerance	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUF. PRESS Rated speed rpm Supply pomp pressure bar	: : : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERIS	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12 TIC Rated speed rpm : 1430 Del. quantity cm3/1000 strokes : 1.5	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PURA PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERIS 1250 6.3 0.3	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12 TIC Rated speed rpm : 1430 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUK. PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa	: : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERIS 1250 6.3	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12 TIC Rated speed rpm : 1430 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5 Shutoff solenoid	
SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PURA PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	0.5 0.3 0.6 12 1250 5.7 0.4 0.7 12 CHARACTERIS 1250 6.3 0.3	Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 6.0 Shutoff solenoid Volt : 12 Rated speed rpm : 1395 Del. quantity cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 8.0 Shutoff solenoid Volt : 12 TIC Rated speed rpm : 1430 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5	

Rated speed rpm	: 1	250 +	Tolerance	
Del. quantity		+	cm3/1000 strokes	: 1.5
cm3/1000 strokes	:	61.0	Check tolerance	
Tolerance		+	cm3/1000s.	: 1.5
cm3/1000 strokes	:	1.5	Shutoff solenoid	
Check tolerance		1	Volt	: 12
cm3/1000s.	•	3.5		,
Shutoff solenoid	•	1	Rated speed rpm	: 425
Volt		12 I		. 423
VOCE	:	12	Del. quantity	: 5,0
Data da a a a a da a a a		F00	cm3/1000 strokes	: 5.0
Rated speed rpm	:	500 +	Tolerance	7.0
Del. quantity		+	cm3/1000 strokes	: 3.0
cm3/1000 strokes	:	62.0	Check tolerance	
Tolerance		+	cm3/1000s.	
cm3/1000 strokes	:	1.5	Shutoff solenoid	
Check tolerance		+	Volt	: 12
cm3/1000s.	:	3.5 +		
Shutoff solenoid		+		
Volt	:	12		
		1		
Rated speed rpm	:	800		
Del. quantity	•	1		
cm3/1000 strokes	:	67.5	START TRANSITION	
Tolerance	•	1	01/11/1 11/11/02/12/1	
cm3/1000 strokes		0.5	Rated speed rpm	: 250
Check tolerance	•	I.	Del. quantity	. 250
		3.0		: 50.0
cm3/1000s.	•	3.0	cm3/1000 strokes	: 50.0
Shutoff solenoid		12	Tolerance	. 40.0
Volt	•	12 +	cm3/1000 strokes	: 10.0
		+	Shutoff solenoid	
		 		40
		+	Volt	: 12
		‡		: 12
ELECTR. SHUTOFF			Volt	
ELECTR. SHUTOFF CONTROL LEVER, ID	OLE STO	P +	Volt Rated speed rpm	
		+	Volt Rated speed rpm Del. quantity	: 150
		P 350	Volt Rated speed rpm Del. quantity cm3/1000 strokes	: 150
CONTROL LEVER, ID		+	Volt Rated speed rpm Del. quantity	: 150
CONTROL LEVER, ID	:	+	Volt Rated speed rpm Del. quantity cm3/1000 strokes	: 150 : 115.0
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes	:	350	Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 150 : 115.0
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 150 : 115.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	350	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: 150 : 115.0 : 25.0
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: 150 : 115.0 : 25.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: 150 : 115.0 : 25.0 : 12
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	:	1.5 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: 150 : 115.0 : 25.0
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU	: 150 : 115.0 : 25.0 : 12
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes	:	1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm	: 150 : 115.0 : 25.0 : 12 STMENT DIMENSIONS : -
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	:	1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm	: 150 : 115.0 : 25.0 : 12 :STMENT DIMENSIONS :- : 5,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: :	1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 : 12 :STMENT DIMENSIONS : - : 5,2 : +-0,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: :	1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm	: 150 : 115.0 : 25.0 : 12 STMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 STMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm	: 150 : 115.0 : 25.0 : 12 STMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm	: 150 : 115.0 : 25.0 : 12 STMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 : 12 : TMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 : 12 : TMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 : 12 :STMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CORated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm	: 150 : 115.0 : 25.0 : 12 : 12 :STMENT DIMENSIONS :- : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Tolerance mm CONTROL LEVER POS SET	: 150 : 115.0 : 25.0 : 12 : 12 : TMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm CONTROL LEVER POS SET	: 150 : 115.0 : 25.0 : 12 : 12 :STMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY Rated speed rpm	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER 350 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Tolerance mm CONTROL LEVER POS SET	: 150 : 115.0 : 25.0 : 12 : 12 :STMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm CONTROL LEVER POS SET	: 150 : 115.0 : 25.0 : 12 : 12 :STMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6 : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY Rated speed rpm	: : : : : : : : : : : : : : : : : : :	1.5 1.5 1.5 5.0 LEVER 350 1.5 1.5	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt ASSEMBLY AND ADJU Dimension K mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm CONTROL LEVER POS SET	: 150 : 115.0 : 25.0 : 12 : 12 :STMENT DIMENSIONS : - : 5,2 : +-0,2 : 1,6 : +-0,2

Control lever position YB mm : 43,6..48,6

End of test-specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 21.04.95 : ISO 4113

Part no.

: 0 460 414 024 Pump designation: VE4/11F1250L164-2

Customer-spec, information Customer

: IVECO-FIAT : 8045.06.220

Motor Power KW

48.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature *C 45 Tolerance °C 1

Overflow

restriction mm

0.55

Inlet press. bar : Tolerance bar

0.35 0.05

Test nozzle holde

assembly

: 1 688 901 020

Opening pressure

bar

172

Tolerance bar

Test lines

: 1 680 750 000

Outside diameter :

6.00

x inside diameter :

2.00

x length mm

840

REMARKS

BEGINNING OF DELIVERY

Prestroke

E26

: 0,2 (as of UT) mm Tolerance mm : +-0,02

Check

tolerance mm

: 4-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 800

Setting mm 3.2 Tolerance mm 0.2

Shutoff solenoid

Valt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 800

Setting hPa Tolerance hPa 0.3 Shutoff solenoid

Valt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 750 Del. quantity

cm3/1000 strokes :

62.5

Tolerance

0.5 cm3/1000 strokes :

Spread

cm3/1000 strokes : 4.0 Shutoff solenoid

Volt

12

IDLE SETTING

Rated speed rpm 350

Del. quantity

cm3/1000 strokes :

23.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.

3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm

1350

Del. quantity

cm3/1000 strokes :

45.0

Tolerance			+ Supply pomp			
cm3/1000 strokes	:	2.0	+ pressure bar	:	3.5	
Shutoff solenoid			† Tolerance hPa	:	3.5	
Volt	:	12	+ Shutoff solenoid			
			† Volt	;	12	
STARTING FUEL DEL	.IVER	Y	†			
Datad annad mus		100	+ OVERFLOW QUANTITY	•		
Rated speed rpm Del. quantity	:	100	T Dated aread was		1250	
cm3/1000 strokes		115.0	+ Rated speed rpm + Overflow quantity		1250	
Tolerance	•	113.0	ccm/10s		97.2	
cm3/1000 strokes		25.0	Tolerance	•	71.6	
Shutoff solenoid	•	25.0	+ ccm/10s	•	41.6	
Volt	:	12	1	•	71.0	
	•		+ Check tolerance			
			+ ccm/10s	:	41.6	
			+ Shutoff solenoid			
			→ Volt	:	12	
			 +			
INJECTION-PUMP TE	ST S	PECIFICATIONS	+ Rated speed rpm	:	500	
			+ Overflow quantity	,		
TIMING DEVICE CHA	RACT	ERISTIC	+ <u>ccm/10s</u>	:	62.5	
Dakad amad am	_	4000	+ Tolerance		20.0	
Rated speed rpm	:	1000	+ ccm/10s	:	20.8	
SV travel mm		5.2	Check tolerance			
Tolerance mm	•	0.4	+ cmeck toterance + ccm/10s		20.8	
Check	•	0.4	Shutoff solenoid	•	20.0	
tolerance mm	•	0.7	+ Volt		12	
Shutoff solenoid	•	0.1	1	•		
Volt	:	12	DELIVERY AND BREA	KAWA	AY CHARACTE	RISTIC
			+			
Rated speed rpm	:	600	+ Rated speed rpm	:	1350	
			+ Del. quantity			
SV travel mm	:	1.6	+ cm3/1000 strokes	:	45.0	
Tolerance mm	:	0.4	+ Tolerance			
Check		0.7	+ cm3/1000 strokes	:	2.0	
tolerance mm Shutoff solenoid	:	0.7	+ Check tolerance + cm3/1000s.	_		
Volt		12	+ Shutoff solenoid	:	6.0	
VOLL	•	12	+ Volt		12	
Rated speed rpm	:	1250	1	•	'-	
	-	. == =	+ Rated speed rpm		1400	
				:	1400	
SV travel mm	:	5.8		:	1400	
SV travel mm Tolerance mm	: :	5.8 0.4	Del. quantity cm3/1000 strokes		13.0	
	:		Del. quantity cm3/1000 strokes Check tolerance		13.0	
Tolerance mm Check tolerance mm	:		Del. quantitycm3/1000 strokesCheck tolerancecm3/1000s.			
Tolerance mm Check tolerance mm Shutoff solenoid	:	0.4	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid		13.0 8.0	
Tolerance mm Check tolerance mm	:	0.4	Del. quantitycm3/1000 strokesCheck tolerancecm3/1000s.		13.0	
Tolerance mm Check tolerance mm Shutoff solenoid Volt	:	0.4 0.7 12	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	:	13.0 8.0 12	
Tolerance mm Check tolerance mm Shutoff solenoid	: : :	0.4 0.7 12	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm		13.0 8.0	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS	: : : : URE (0.4 0.7 12 CHARACTERISTIC	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity	: : :	13.0 8.0 12 1450	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm	: : : : URE (0.4 0.7 12	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes	:	13.0 8.0 12	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp	: : : : : :	0.4 0.7 12 CHARACTERISTIC 1250	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : :	13.0 8.0 12 1450 1.5	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar	: : : : : :	0.4 0.7 12 CHARACTERISTIC 1250 6.4	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : :	13.0 8.0 12 1450	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa	: : : : : : :	0.4 0.7 12 CHARACTERISTIC 1250	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: : :	13.0 8.0 12 1450 1.5	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar	: : : : : :	0.4 0.7 12 CHARACTERISTIC 1250 6.4	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : :	13.0 8.0 12 1450 1.5 1.5	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : : : :	0.4 0.7 12 CHARACTERISTIC 1250 6.4 0.3	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: : :	13.0 8.0 12 1450 1.5 1.5	
Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : : : :	0.4 0.7 12 CHARACTERISTIC 1250 6.4 0.3	Del. quantity cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: : :	13.0 8.0 12 1450 1.5 1.5	

Rated speed rpm	: 1250	+ Tolerance
Del. quantity cm3/1000 strokes	: 53.5	+ cm3/1000 strokes : 1.5 + Check tolerance
Tolerance		+ cm3/1000s. : 1.5
cm3/1000 strokes Check tolerance	: 1.5	+ Shutoff solenoid + Volt : 12
cm3/1000s. Shutoff solenoid	: 3.5	12
Volt	: 12	-
Rated speed rpm Del. quantity	: 500	1
cm3/1000 strokes Tolerance	: 59.0	START TRANSITION
cm3/1000 strokes Check tolerance		Rated speed rpm : 250 Del. quantity
cm3/1000s. Shutoff solenoid	: 3.5	cm3/1000 strokes : 40.0 Tolerance
Volt	: 12	- cm3/1000 strokes : 10.0 - Shutoff solenoid
Rated speed rpm Del. quantity	: 750	Volt : 12
cm3/1000 strokes Tolerance	: 62.5	Rated speed rpm : 150
cm3/1000 strokes Check tolerance	: 0.5	Del. quantity cm3/1000 strokes : 125.0
cm3/1000s. Shutoff solenoid	: 3.0	Tolerance cm3/1000 strokes : 25.0
Volt	: 12	+ Shutoff solenoid + Volt : 12
ELECTR. SHUTOFF CONTROL LEVER, ID	DLE STOP	ASSEMBLY AND ADJUSTMENT DIMENSIONS
CONTROL LEVER, ID		ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : -
	: 350	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : -
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 350 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 350 : 1.5 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	: 350 : 1.5 : 1.5 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes	: 350 : 1.5 : 1.5 : 1.5 : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2
CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	: 350 : 1.5 : 1.5 : 1.5 : 5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION SET
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO	: 350 : 1.5 : 1.5 : 1.5 : 5.0 NTROL LEVER	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes	: 350 : 1.5 : 1.5 : 1.5 : 5.0 NTROL LEVER : 350	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION SET Control lever position YA mm : 37,939,9 Control lever
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 350 : 1.5 : 1.5 : 5.0 NTROL LEVER : 350 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION SET Control lever position YA mm : 37,939,9
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 350 : 1.5 : 1.5 : 5.0 NTROL LEVER : 350 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION SET Control lever position YA mm : 37,939,9 Control lever
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 350 : 1.5 : 1.5 : 5.0 NTROL LEVER : 350 : 1.5 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION SET Control lever position YA mm : 37,939,9 Control lever
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes FULL-LOAD STOP CO Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY Rated speed rpm	: 350 : 1.5 : 1.5 : 5.0 NTROL LEVER : 350 : 1.5 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION SET Control lever position YA mm : 37,939,9 Control lever position YB mm : 44,249,6
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Spread cm3/1000 strokes FULL-LOAD STOP CORated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. IDLE DELIVERY	: 350 : 1.5 : 1.5 : 5.0 NTROL LEVER : 350 : 1.5 : 1.5 : 1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : - Dimension KF mm : 5,2 Tolerance mm : +-0,2 Dimension MS mm : 1,6 Tolerance mm : +-0,2 CONTROL LEVER POSITION SET Control lever position YA mm : 37,939,9 Control lever position YB mm : 44,249,6

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.12.95 Test oil : ISO 4113

Part no. : 0 460 406 049 Pump designation : VE6/10F2400L216

Customer-spec. information Customer : VW

Customer : VW Motor : 087T-Vol LLK

Power KW : 90.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 800
Setting mm : 1.7
Tolerance mm : 0.2

Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500 Aneroid pressure

hPa : 800

Setting hPa : 6.0 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 800
Del. quantity
cm3/1000 strokes : 46.0
Tolerance
cm3/1000 strokes : 0.5
Spread

Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 3.0

Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 3.0

IDLE SETTING

Rated speed rpm : 415
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

Spread			
			+ Tolerance mm : 0.4
cm3/1000 strokes	:	2.0	+ Check
Check tolerance			tolerance mm : 0.7
cm3/1000s.	:	3.0	+ Shutoff solenoid
			+ Volt : 12
FULL LOAD COFFE I	TCI II	ATTON	CURRILY RUMP PRECCURE CHARACTERICITY
FULL-LOAD SPEED F	くとらい	LATION	SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm	•	2675	Rated speed rpm : 2400
Pressure hPa	:	800	+ Aneroid pressure
Del. quantity	•		+ hPa : 800
cm3/1000 strokes	:	16.0	+ Supply pomp
Tolerance			pressure bar : 8.2
cm3/1000 strokes	:	2.0	+ Tolerance hPa : 0.3
Shutoff solenoid		40	+ Shutoff solenoid
Volt	:	12	† Volt : 12
STARTING FUEL DEL	TVE	DV.	+ Rated speed rpm : 600
STARTING FUEL DEL	TACI	X I	+ Rated speed rpm : 600 + Aneroid pressure
Rated speed rpm	:	100	hPa : 800
Del. quantity	•		+ Supply pomp
cm3/1000 strokes	:	65.0	+ pressure bar : 3.6
Tolerance			† Tolerance hPa : 0.3
cm3/1000 strokes	:	25.0	+ Shutoff solenoid
Shutoff solenoid		40	+ Volt : 12
Volt	:	12	OVERFLOW QUANTITY
			I OVERFEOW GOMNITH
			+ Rated speed rpm : 600
			Overflow quantity
INJECTION-PUMP TE	CT C	PROTETOATT	NNS + Tolerance
7140 5 6 1 7 5 14 1 5 11 1 1 5	:01	SECTLICALI	
			ccm/10s : 20.8
TIMING DEVICE CHA			ccm/10s : 20.8
TIMING DEVICE CHA	RACT	TERISTIC	ccm/îOs : 20.8 Check tolerance
TIMING DEVICE CHA			ccm/10s : 20.8
TIMING DEVICE CHA	RACT	TERISTIC	ccm/îOs : 20.8 Check tolerance
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa	RACT	TERISTIC 2400	Check tolerance ccm/10s : 20.8 Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa Tolerance mm Check	RACT	2400 800 0.4	Check tolerance ccm/10s : 20.8 Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm	RACT	TERISTIC 2400 800	Check tolerance ccm/10s : 20.8 Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure
TIMING DEVICE CHARATED Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid	RACT	2400 800 0.4 0.7	Check tolerance ccm/10s : 20.8 Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm	RACT	2400 800 0.4	Check tolerance ccm/10s : 20.8 Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid	RACT	2400 800 0.4 0.7	Check tolerance ccm/10s : 20.8 Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2
TIMING DEVICE CHARACTER Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt	RACT	2400 800 0.4 0.7	Check tolerance ccm/10s : 34.7 Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid	RACT	2400 800 0.4 0.7	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance
TIMING DEVICE CHARATED Speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	RACT	2400 800 0.4 0.7 12 1200 800	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm	RACT	2400 800 0.4 0.7 12 1200 800 0.8	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm	RACT	2400 800 0.4 0.7 12 1200 800	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid
TIMING DEVICE CHARACTER Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check	RACT	2400 800 0.4 0.7 12 1200 800 0.8 0.4	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm	RACT	2400 800 0.4 0.7 12 1200 800 0.8	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid Volt : 12
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	RACT	2400 800 0.4 0.7 12 1200 800 0.8 0.4 0.7	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm	RACT	2400 800 0.4 0.7 12 1200 800 0.8 0.4	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid Volt : 12
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	RACT	2400 800 0.4 0.7 12 1200 800 0.8 0.4 0.7	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid Volt : 12 DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2675 Aneroid pressure
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure	: : : : : : : : : : : : : : : : : : :	2400 800 0.4 0.7 12 1200 800 0.8 0.4 0.7 12 2000	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid Volt : 12 DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2675 Aneroid pressure hPa : 800
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Rated speed rpm	: : : : : : : : : : : : : : : : : : :	2400 800 0.4 0.7 12 1200 800 0.8 0.4 0.7 12	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid Volt : 12 DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2675 Aneroid pressure hPa : 800 Del. quantity
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure	: : : : : : : : : : : : : : : : : : :	2400 800 0.4 0.7 12 1200 800 0.8 0.4 0.7 12 2000	Check tolerance ccm/10s : 34.7 Shutoff solenoid Volt : 12 Rated speed rpm : 2400 Aneroid pressure hPa : 800 Overflow quantity ccm/10s : 97.2 Tolerance ccm/10s : 41.6 Check tolerance ccm/10s : 55.5 Shutoff solenoid Volt : 12 DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2675 Aneroid pressure hPa : 800

Tolerance			+	Check tolerance			
cm3/1000 strokes Check tolerance	:	2.0	İ	cm3/1000S. Shutoff solenoid	:	3.0	
cm3/1000s. Shutoff solenoid	:	4.0	+	Volt	:	12	
Volt	:	12	Ŧ	Rated speed rpm		1500	
Rated speed rpm	:	2850	Ŧ	Aneroid pressure hPa	:	800	
Aneroid pressure hPa	:	800	Ŧ	Del. quantity cm3/1000 strokes	:	46.0	
Del. quantity cm3/1000 strokes Check tolerance	:	3.0	Ţ	Tolerance cm3/1000 strokes Check tolerance	:	0.5	
cm3/1000s. Shutoff solenoid	:	6.0	$\frac{1}{1}$	cm3/1000s. Shutoff solenoid	:	2.2	
Volt	:	12	$\frac{1}{1}$	Volt	:	12	
Rated speed rpm Aneroid pressure	:	2575	1				
hPa Del. quantity	:	800	+	ELECTR. SHUTOFF CONTROL LEVER, IN	olf S	STOP	
cm3/1000 strokes Tolerance	:	30.0	+	Rated speed rpm		415	
cm3/1000 strokes Check tolerance	:	5.0	+	Del. quantity cm3/1000 strokes		1.5	
cm3/1000s. Shutoff solenoid	:	6.0	+	Tolerance cm3/1000 strokes		1.5	
Volt	:	12	‡	Check tolerance cm3/1000s.	:	1.5	
Rated speed rpm Aneroid pressure	:	800	‡	Spread cm3/1000 strokes	:	5.0	
hPa Del. quantity	:	300	+	FULL-LOAD STOP CO			
cm3/1000 strokes Tolerance	:	34.5	1	Rated speed rpm			
cm3/1000 strokes Check tolerance	:	0.5	1	Del. quantity cm3/1000 strokes		1.5	
cm3/1000S. Shutoff solenoid	:	3.0	†	Tolerance cm3/1000 strokes		1.5	
Volt	:	12	‡	Spread cm3/1000 strokes		5.0	
Rated speed rpm Aneroid pressure	:	2400	‡	Check tolerance cm3/1000s.	:	1.5	
hPa Del. quantity	:	800	‡	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes Tolerance	:	38.5	‡	IDLE DELIVERY			
cm3/1000 strokes Check tolerance	:	1.0	‡	Rated speed rpm	:	750	
cm3/1000S. Shutoff solenoid	:	2.2	‡	Del. quantity cm3/1000 strokes	;	2.0	
Volt	:	12	‡	Tolerance cm3/1000 strokes	:	2.0	
Rated speed rpm Aneroid pressure	:	600	‡	Check tolerance cm3/1000s.	:	2.0	
hPa Del. quantity	:	800	‡	Shutoff solenoid Volt	:	12	
cm3/1000 strokes Tolerance	:	40.0	+				
cm3/1000 strokes	:	1.5	+				

START TRANSITION

Rated speed rpm : 380 Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 230

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 6,4
Tolerance mm : +-0,2
Dimension MS mm : 1,8
Tolerance mm : +-0,2
TLA travel mm : 12,7

CONTROL LEVER POSITION SET

Control Lever

position YA mm : 8,5...10,5

Control lever

position YB mm : 71,0..89,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 23,06,95 Edition Test oil : ISO 4113 : 0 460 485 023 Part no. Pump designation: VE5/8F2100L457-2 Customer-spec. information Customer : VW : 2,41 WK-SD T4 Motor TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C 45 Tolerance °C Overflow restriction mm 0.55 Inlet press. bar : 0.35 Tolerance bar 0.05Test nozzle holde : 1 688 901 000 assembly Opening pressure bar 147 Tolerance bar Test lines : 1 680 750 000 Outside diameter : 6.00 3.00 x inside diameter : 840 x length mm REMARKS

Rated speed rpm 4.3 Setting mm Tolerance mm 0.2 Shutoff solenoid 12 Volt SUPPLY PUMP PRESSURE Rated speed rpm : 1500 Setting hPa 7.4 Tolerance hPa 0.3 Shutoff solenoid 12 Volt FULL-LOAD DELIV. WITHOUT BOOST PRESSURE Rated speed rpm 1250 Del. quantity cm3/1000 strokes : 35.5 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12 HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING Rated speed rpm 540 Del. quantity cm3/1000 strokes : 7.0 Tolerance cm3/1000 strokes 0.5 Shutoff solenoid 12 Volt FULL-LOAD SPEED REGULATION 2400 Rated speed rpm Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid Volt 12

1500

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

		+	Supply pomp			
		+	pressure bar	:	8.1	
LOAD DEDCLIDENT OF	FART OF BELTWERY	+	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST SETTING	IART OF DELIVERY	1	Shutoff solenoid Volt		12	
SELLING		I	VOCE	•	12	
DELIVERY DIFFEREN	NCE	1	Rated speed rpm	:	1100	
		+	Supply pomp			
Rated speed rpm	: 1500	+	pressure bar	:	6.2	
Del. quantity	. 70	†	Tolerance hPa	:	0.3	
cm3/1000 strokes Tolerance	: -7.0	1	Shutoff solenoid Volt		12	
cm3/1000 strokes	: 1.0	I	VOCC	•	12	
Shutoff solenoid	.,,	1	OVERFLOW QUANTITY			
Volt	: 12	+				
		+	Rated speed rpm		2100	
PRESSURE DIFFEREN	ICE	†	Overflow quantity		07.2	
Rated speed rpm	• 1500	1	ccm/10s Tolerance	:	97.2	
Del. quantity	. 1200	I	ccm/10s	•	41.6	
cm3/1000 strokes	: -0.2	1	· · · · · · · · · · · · · · · · · · ·	•	1.10	
Tolerance		+	Check tolerance			
cm3/1000 strokes	: 0.1	+	ccm/10s	:	55.5	
Shutoff solenoid	. 10	†	Shutoff solenoid	_	10	
Volt	: 12	İ	Volt	:	12	
TIMING-DEVICE TRA	WEL DIFFERENCE	I	Rated speed rpm	:	600	
12/12/10 02/12/0		+	Overflow quantity			
Rated speed rpm	: 1500	÷	ccm/10s	:	63.8	
Del. quantity		+	Tolerance			
cm3/1000 strokes	: -1.2	†	ccm/10s	:	22.2	
Tolerance cm3/1000 strokes	: 0.1	Ī	Check tolerance			
Shutoff solenoid	. 0.1	1	ccm/10s	:	34.7	
Volt	: 12	+	Shutoff solenoid			
		t	Volt	:	12	
THE STATE OF THE TE	OT 005075704770N0	 +	AEL THEON AND DOCAL	- 6 1.14		
INJECTION-PUMP TE	ST SPECIFICATIONS	Ī	DELIVERY AND BREAK	KAWA	AT CHARACTERIS	IIC
TIMING DEVICE CHA	RACTERISTIC	I	Rated speed rpm	:	2400	
TIMING DEVICE COM	IN TOTAL CONTROL OF THE PARTY O	1	Del. quantity	•	2 100	
Rated speed rpm		+	cm3/1000 strokes	:	12.0	
Tolerance mm	: 0.4	+	Tolerance			
Check	. 07	†	cm3/1000 strokes	:	2.0	
tolerance mm Shutoff solenoid	: 0.7	Ī	Check tolerance cm3/1000s.		4.0	
Volt	: 12	1	Shutoff solenoid	•	4.0	
7010		+	Volt	:	12	
Rated speed rpm	: 1100	+				
		+	Rated speed rpm	:	2300	
SV travel mm	: 1.6 : 0.4	†	Del. quantity cm3/1000 strokes		22.0	
Tolerance mm Check	. 0.4	I	Tolerance	•	22.0	
tolerance mm	: 0.7	1	cm3/1000 strokes	:	5.0	
Shutoff solenoid		+	Check tolerance			
Volt	: 12	+	cm3/1000s.	:	6.0	
611881 V 81114 85	HDE AHADAATTATAT	<u> </u>	Shutoff solenoid	_	40	
SUPPLY PUMP PRESSI	URE CHARACTERISTI	• †	Volt	:	12	
Rated speed rpm	: 1790	I	Rated speed rpm	:	2600	
Tasca opeca (pili	, •	•	Carea opera i pin	-		

F06

Del. quantity			+ Spread	
cm3/1000 strokes	:	3.0	+ cm3/1000 strokes : 5.0	
Tolerance			+	
cm3/1000 strokes	•	3.0	→ FULL-LOAD STOP CONTROL LEVER	
Check tolerance	•	***	1	
cm3/1000s.		3.0	Rated speed rpm : 415	
Shutoff solenoid	•	3.0		
	_	40	+ Del. quantity	
Volt	;	12	cm3/1000 strokes : 1.5	
			+ Tolerance	
Rated speed rpm	:	2100	+ cm3/1000 strokes : 1.5	
Del. quantity			+ Spread	
cm3/1000 strokes	:	29.5	+ cm3/1000 strokes : 5.0	
Tolerance			+ Check tolerance	
cm3/1000 strokes	•	1.0	+ cm3/1000s. : 1.5	
Check tolerance	•	1.0	+ Spread	
cm3/1000S.		2.2	cm3/1000 strokes : 5.0	
	•	۷.۲	T CIIIS/ 1000 SEPORES . 3.0	
Shutoff solenoid		40	†	
Volt	:	12	†	
			+	
Rated speed rpm	:	1850		
Del. quantity			+ RESIDUAL QUANTITY	
cm3/1000 strokes	:	32.5	1	
Tolerance	•		Rated speed rpm : 490	
cm3/1000 strokes		3.0	+ Del. quantity	
Shutoff solenoid	•	5.0	cm3/1000 strokes : 7.8	
		40		
Volt	:	12	+ Tolerance	
			+ cm3/1000 strokes : 1.0	
Rated speed rpm	:	600	+ Check tolerance	
Del. quantity			+ cm3/1000s. : 2.5	
cm3/1000 strokes	:	33.3	→ Shutoff solenoid	
			→ Volt : 12	
Tolerance	•	1.5	+ Volt : 12	
Tolerance cm3/1000 strokes	:	1.5	Volt : 12	
Tolerance cm3/1000 strokes Check tolerance			Volt : 12	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5 3.0		
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid		3.0	CHECKING LOAD-DEPENDENT	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.				
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	:	3.0 12	CHECKING LOAD-DEPENDENT START OF DELIVERY	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	3.0 12	CHECKING LOAD-DEPENDENT	
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	:	3.0 12	CHECKING LOAD-DEPENDENT START OF DELIVERY	
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity	:	3.0 12 1250	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes	:	3.0 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	3.0 12 1250 35.5	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	3.0 12 1250	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	3.0 12 1250 35.5 0.5	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	3.0 12 1250 35.5	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	3.0 12 1250 35.5 0.5	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	:	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid	
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	:	3.0 12 1250 35.5 0.5 2.2	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12	
Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt ELECTR. SHUTOFF	: : : : : : : : : : : : : : : : : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid	
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Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt ELECTR. SHUTOFF CONTROL LEVER, ID	: : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500	
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Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes	: : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes	: : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1 Check tolerance	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1	
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Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt ELECTR. SHUTOFF CONTROL LEVER, ID Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : :	3.0 12 1250 35.5 0.5 2.2 12	CHECKING LOAD-DEPENDENT START OF DELIVERY DELIVERY DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -10.5 Tolerance cm3/1000s trokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1500 Del. quantity cm3/1000 strokes : -1.2 Tolerance cm3/1000 strokes : 0.1 Check tolerance	

DELIVERY DIFFERENCE

Rated speed rpm : 1500

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 strokes : 1.5

Check tolerance

cm3/1000s. : 1.5

Shutoff solenoid

Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500

Supply pomp

pressure bar : -1.0 Tolerance hPa : 0.2

Shutoff solenoid

Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm : 0.2

Check

tolerance mm : 0.6

Shutoff solenoid

Volt : 12

START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +-0,1

Dimension KF mm : 5,8 Tolerance mm : +-0,2

Dimension MS mm : 1,4 Tolerance mm : +-0,2

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CONTROL LEVER POSITION

SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

End of test-specification sheet

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Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 21.04.95 Edition Test oil : ISO 4113

: 0 460 485 030 Part no. Pump designation: VE5/8F2100L457-5

Customer-spec. information

: VW Customer

: 2,41 WK-SD T4 Motor

57.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rpm :

Setting mm 4.3 Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1500 :

Setting hPa 7.4 Tolerance hPa 0.3 Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 1250

Del. quantity cm3/1000 strokes : 35.5

Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 540

Del. quantity

cm3/1000 strokes : 7.0 Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity cm3/1000 strokes :

60.0

Tolerance

cm3/1000 strokes : 25.0

			•				
Shutoff solenoid Volt	:	12	†	Rated speed rpm Supply pomp	:	1790	
			<u> </u>	pressure bar	:	8.1	
			+	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST SETTING	FART	OF DELIVERY	‡	Shutoff solenoid Volt	:	12	
DELIVERY DIFFEREN	1CE		Ī	Rated speed rpm	:	1500	
Rated speed rpm Del. quantity	:	1500	1	Rated speed rpm	:	1250	
cm3/1000 strokes Tolerance	:	-7.0	1	Rated speed rpm Supply pomp	:	1100	
cm3/1000 strokes	:	1.0	+	pressure bar	:	6.2	
Shutoff solenoid			+	Tolerance hPa	:	0.3	
Volt	:	12	†	Shutoff solenoid		12	
PRESSURE DIFFEREN	J(E		I	Volt	•	12	
. HEODOILE DIFFEREN			1	OVERFLOW QUANTITY			
Rated speed rpm Del. quantity	:	1500	<u> </u>	Rated speed rpm	:	2100	
cm3/1000 strokes	:	-0.2	1	Overflow quantity		2.00	
Tolerance			+	ccm/10s	:	97.2	
cm3/1000 strokes	:	0.1	†	Tolerance		11 1	
Shutoff solenoid Volt		12	Ī	ccm/10s	:	41.6	
VOCE	•	12	I	Check tolerance			
TIMING-DEVICE TRA	VEL	DIFFERENCE	1	ccm/10s Shutoff solenoid	:	55.5	
Rated speed rpm	:	1500	1	Volt	:	12	
Del. quantity			+				
cm3/1000 strokes	:	-1.2	+	Rated speed rpm	:	600	
Tolerance cm3/1000 strokes		0.1	1	Overflow quantity ccm/10s		63.8	
Shutoff solenoid	•	0.7	I	Tolerance	•	05.0	
Volt	:	12	+	ccm/10s	:	22.2	
			+				
TALLECTY ON DUMP TE	· C Ŧ	CDCCICICATIONS	†	Check tolerance		34.7	
INJECTION-PUMP TE	31	SPECIFICATIONS	Ī	ccm/10s Shutoff solenoid	•	34.7	
TIMING DEVICE CHA	RAC	TERISTIC	1	Volt	:	12	
			+				
Rated speed rpm			+	DELIVERY AND BREAK	AWA	Y CHARAC	TERISTIC
Tolerance mm Check	:	0.4	1	Rated speed rpm		2400	
tolerance mm	:	0.7	I	Del. quantity	•	L+00	
Shutoff solenoid	٠		+	cm3/1000 strokes	:	12.0	
Volt	:	12	+	Tolerance			
Bakad awasal		1100	†	cm3/1000 strokes	:	2.0	
Rated speed rpm	:	1100	İ	Check tolerance cm3/1000s.	•	4.0	
SV travel mm	:	1.6	Ţ	Shutoff solenoid	•	7.0	
Tolerance mm	:	0.4	+	Volt	:	12	
Check			+			2700	
tolerance mm	:	0.7	†		:	2300	
Shutoff solenoid Volt	:	12	‡	Del. quantity cm3/1000 strokes	:	22.0	
SUPPLY PUMP PRESS	URE	CHARACTERISTIC	‡	Tolerance cm3/1000 strokes	:	5.0	
			•				

Check tolerance			+	Del. quantity		
cm3/1000s.	:	6.0	+	cm3/1000 strokes	:	1.5
Shutoff solenoid Volt		12	İ	Tolerance cm3/1000 strokes		1.5
VOCC	•	16	\downarrow	Check tolerance	•	1.0
Rated speed rpm Del. quantity	: 2	2600	1	cm3/1000S. Spread	:	1.5
cm3/1000 strokes Tolerance	:	3.0	1	cm3/1000 strokes	:	5.0
cm3/1000 strokes Check tolerance	:	3.0	1	FULL-LOAD STOP CO	NTR	OL LEVER
cm3/1000s. Shutoff solenoid	:	3.0	†	Rated speed rpm Del. quantity	:	415
Volt	:	12	Ŧ	cm3/1000 strokes Tolerance	:	1.5
Rated speed rpm	: 2	100	Ŧ	cm3/1000 strokes	:	1.5
Del. quantity cm3/1000 strokes	:	29.5	Ŧ	Spread cm3/1000 strokes Check tolerance	:	5.0
Tolerance cm3/1000 strokes	:	1.0	Ŧ	cm3/1000s.	:	1.5
Check tolerance cm3/1000s.	:	2.2	Ŧ	Spread cm3/1000 strokes	:	5.0
Shutoff solenoid Volt	:	12	Ī			
Rated speed rpm Del. quantity	: 1	850	Ī	RESIDUAL QUANTITY		
cm3/1000 strokes Tolerance	:	32.5	1	Rated speed rpm		490
cm3/1000 strokes Shutoff solenoid	:	3.0	Ì	Del. quantity cm3/1000 strokes		7.8
Volt	:	12	Ţ	Tolerance		
Rated speed rpm	:	600	‡	cm3/1000 strokes Check tolerance	:	1.0
Del. quantity			+	cm3/1000s.	:	2.5
cm3/1000 strokes Tolerance	:	33.3	‡	Shutoff solenoid Volt	:	12
cm3/1000 strokes Check tolerance	:	1.5	+			
cm3/1000s.	:	3.0	+	CUECKTNG LOAD DED	- LIN	FAIT
Shutoff solenoid Volt	:	12	Ŧ	CHECKING LOAD-DEP START OF DELIVERY		EIVI
Rated speed rpm Del. quantity	: 1	250	<u> </u>	DELIVERY DIFFEREN	CE	
cm3/1000 strokes Tolerance	:	35.5	1	Rated speed rpm Del. quantity	:	1500
cm3/1000 strokes Check tolerance	:	0.5	<u>†</u>	cm3/1000 strokes Tolerance	:	-10.5
cm3/1000s. Shutoff solenoid	:	2.2	1	cm3/1000 strokes Check tolerance	:	3.0
Volt	:	12	=	cm3/1000S. Shutoff solenoid	:	4.0
			1	Volt	:	12
ELECTR. SHUTOFF CONTROL LEVER, IDI	E STO	P	1	TIMING-DEVICE TRA	VEL	DIFFERENCE
·			+	Rated speed rpm	:	1500
Rated speed rpm	:	415	‡	Del. quantity cm3/1000 strokes	:	-1.2

Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid Volt	:	0.1 0.1 12	
DELIVERY DIFFEREN	1CE		
Rated speed rpm	:	1500	
Del. quantity cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes	:	1.5	
Check tolerance cm3/1000s.	:	1.5	
Shutoff solenoid Volt	:	12	
PRESSURE DIFFEREN	ICE		
Rated speed rpm	:	1500	
Supply pomp pressure bar	:	-1.0	
Tolerance hPa Shutoff solenoid	:	0.2	
Volt	:	12	
		D.Y.E.E.E.E.E.LOE	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	1500	
Rated speed rpm Tolerance mm Check tolerance mm		1500	
Rated speed rpm Tolerance mm Check	:	1500 0.2	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid	:	1500 0.2 0.6	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm	:	1500 0.2 0.6	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes	:	1500 0.2 0.6 12	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	1500 0.2 0.6 12	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	1500 0.2 0.6 12 380 27.0	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1500 0.2 0.6 12 380 27.0 10.0	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity	: : : : : : : : : : : : : : : : : : : :	1500 0.2 0.6 12 380 27.0 10.0 12	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	1500 0.2 0.6 12 380 27.0 10.0 12 180 60.0	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : : :	1500 0.2 0.6 12 380 27.0 10.0 12	
Rated speed rpm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	1500 0.2 0.6 12 380 27.0 10.0 12 180 60.0	

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 5,8
Tolerance	mm	: +-0,2
Dimension	MS mm	: 1,4
Tolerance	mm	: +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.03.96 Test oil : ISO 4113

: 0 460 403 015 Part no. Pump designation : VE3/10F1500L481

Customer-spec. information

Customer : VM

: HR 394 HT Motor Power KW 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm Aneroid pressure	:	1200
hPa	:	1000
Setting mm Tolerance mm	:	2.6 0.2
Shutoff solenoid Volt	:	12

SUPPLY PUMP PRESSURE

Rated speed rpm	:	1200
Aneroid pressure hPa	:	1000
Setting hPa	:	5.9
Tolerance hPa	:	0.3
Shutoff solenoid		
Volt	:	12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1200
Aneroid pressure		
hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	67.5
Tolerance		
cm3/1000 strokes	:	0.5
Spread		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	4.0
Shutoff solenoid		
Volt	:	12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm Del. quantity	:	600
cm3/1000 strokes	:	59.5
Tolerance cm3/1000 strokes Shutoff solenoid	:	0.5
Volt Check tolerance	:	12
cm3/1000s.	:	4.0

IDLE SETTING

Rated speed rpm	:	400
Del. quantity		
cm3/1000 strokes	:	12.5
Tolerance		
cm3/1000 strokes	:	2.0
Shutoff solenoid		
Volt	:	12

Spread		+ Tolerance
cm3/1000 strokes	: 3.5	+ cm3/1000 strokes : 0.1
Check tolerance		+ Shutoff solenoid
cm3/1000s.	: 3.5	+ Volt : 12
CIIO/ 10000:	. 3.5	1
		<u> </u>
FULL-LOAD SPEED F	DECLII ATTON	INJECTION-PUMP TEST SPECIFICATIONS
FOLE-LOAD SPEED R	REGULATION	T INDECTION FORM TEST SPECIFICATIONS
Rated speed rpm	: 1570	TIMING DEVICE CHARACTERISTIC
Pressure hPa	: 1000	T ITHING DEVICE CHARACTERISTIC
Del. quantity	. 1000	Rated speed rpm : 1500
cm3/1000 strokes	: 50.0	
	; 50.0	+ Aneroid pressure + hPa : 1000
Tolerance	: 3.0	† nPa : 1000
cm3/1000 strokes	; 3.0	7 64 +
Shutoff solenoid	. 43	+ SV travel mm : 3.9
Volt	: 12	+ Tolerance mm : 0.4
	w. (mm).	+ Check
STARTING FUEL DEL	.IVERY	tolerance mm : 0.7
~	400	+ Shutoff solenoid
Rated speed rpm	: 100	† Volt : 12
Del. quantity		+
cm3/1000 strokes	: 85.0	+ Rated speed rpm : 1000
Tolerance		+ Aneroid pressure
cm3/1000 strokes	: 25.0	+ hPa : 1000
Shutoff solenoid		+
Volt	: 12	+ SV travel mm : 1.7
		† Tolerance mm : 0.4
		+ Check
		† tolerance mm : 0.7
LOAD-DEPENDENT ST	ART OF DELIVERY	+ Shutoff solenoid
SETTING		+ Volt : 12
		+
DELIVERY DIFFEREN	ICE	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
		+
Rated speed rpm	: 1200	+ Rated speed rpm : 1500
Del. quantity		+ Aneroid pressure
cm3/1000 strokes	: -7.0	+ hPa : 1000
Tolerance		+ Supply pomp
cm3/1000 strokes	: 1.0	+ pressure bar : 7.2
Shutoff solenoid		+ Tolerance hPa : 0.3
Volt	: 12	+ Shutoff solenoid
		† Volt : 12
PRESSURE DIFFEREN	CE	+
		+ Rated speed rpm : 750
Rated speed rpm	: 1200	+ Aneroid pressure
Aneroid pressure		+ hPa : 1000
hPa	: 1000	+ Supply pomp
Del. quantity		+ pressure bar : 4.1
cm3/1000 strokes	: -0.2	† Tolerance hPa : 0.3
Tolerance		+ Shutoff solenoid
cm3/1000 strokes	: 0.1	† Volt : 12
Shutoff solenoid	4.5	†
Volt	: 12	+ OVERFLOW QUANTITY
		† P. 1. 1
TIMING-DEVICE TRA	VEL DIFFERENCE	+ Rated speed rpm : 1500
	1000	+ Aneroid pressure
Rated speed rpm	: 1200	+ hPa : 1000
Del. quantity		+ Overflow quantity
cm3/1000 strokes	: -0.9	+ ccm/10s : 97.2
		+

Tolerance		+ Rated speed rpm : 1500
ccm/10s	: 41.6	+ Aneroid pressure + hPa : 1000
Check tolerance ccm/10s	: 41.6	+ Del. quantity + cm3/1000 strokes : 65.5
Shutoff solenoid Volt	: 12	Tolerance cm3/1000 strokes : 1.5
Rated speed rpm	: 750	+ Check tolerance + cm3/1000s. : 3.0
Aneroid pressure	: 1000	Shutoff solenoid Volt : 12
Overflow quantity ccm/10s		Rated speed rpm : 750
Tolerance ccm/10s	: 20.8	Del. quantity cm3/1000 strokes : 57.5
	. 20.0	+ Tolerance
Check tolerance	: 20.8	+ cm3/1000 strokes : 2.0 + Shutoff solenoid
Shutoff solenoid Volt	: 12	+ Volt : 12
DELIVERY AND BREA	KAWAY CHARACTERISTIC	+ Rated speed rpm : 750 + Aneroid pressure
Rated speed rpm	: 1570	+ hPa : 1000 + Del. quantity
Aneroid pressure	: 1000	cm3/1000 strokes : 68.0
Del. quantity cm3/1000 strokes		cm3/1000 strokes : 1.5
Tolerance		+ cm3/1000s. : 3.0
cm3/1000 strokes Check tolerance		+ Shutoff solenoid + Volt : 12
cm3/1000S. Shutoff solenoid	: 6.5	Rated speed rpm : 1200
Volt	: 12	+ Aneroid pressure + hPa : 1000
Rated speed rpm Aneroid pressure	: 1670	Del. quantity cm3/1000 strokes : 67.5
hPa Del. quantity	: 1000	Tolerance cm3/1000 strokes : 0.5
cm3/1000 strokes	: 1.5	+ Check tolerance
Check tolerance cm3/1000S.	: 1.5	+ cm3/1000s. : 3.0 + Shutoff solenoid
Shutoff solenoid Volt	: 12	+ Volt : 12
Rated speed rpm	: 750	‡
Aneroid pressure hPa	: 350	+ ELECTR. SHUTOFF + CONTROL LEVER, IDLE STOP
LDA/		t Dated around any (00
HBA stroke mm		+ Rated speed rpm : 400
Del. quantity	: 5.0	+ Del. quantity
Del. quantity cm3/1000 strokes		Del. quantity cm3/1000 strokes : 1.5 Tolerance
cm3/1000 strokes Tolerance cm3/1000 strokes	: 62.0	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 62.0	Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 strokes: 1.5 Check tolerance cm3/1000s.: 1.5 Spread
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 62.0 : 0.5	Del. quantity cm3/1000 strokes: 1.5 Tolerance cm3/1000 strokes: 1.5 Check tolerance cm3/1000s.: 1.5

		1 -
Dated aread are	: 400	+ Tolerance + cm3/1000 strokes : 0.1
Rated speed rpm Del. quantity	: 400	+ Check tolerance
cm3/1000 strokes	; 1.5	- cm3/1000s. : 0.1
Tolerance	• (•)	Shutoff solenoid
cm3/1000 strokes	: 1.5	+ Volt : 12
Spread	• • • • • • • • • • • • • • • • • • • •	
cm3/1000 strokes	: 5.0	→ DELIVERY DIFFERENCE
Check tolerance		+
cm3/1000s.	: 1.5	+ Rated speed rpm : 1200
Spread		+ Del. quantity
cm3/1000 strokes	: 5.0	+ cm3/1000 strokes : 5.0
TOLE DELTHERY		+ Tolerance
IDLE DELIVERY		+ cm3/1000 strokes : 2.0
Rated speed rpm	; 440	+ Shutoff solenoid + Volt : 12
Del. quantity	, 440	
cm3/1000 strokes	: 5.0	TIMING-DEVICE TRAVEL DIFFERENCE
Tolerance	. 5.0	TIME DEVICE TRAVEL DITTERENCE
cm3/1000 strokes	; 3.0	Rated speed rpm : 1200
Check tolerance		1
cm3/1000S.	: 4.0	+ SV travel mm : -1.7
Shutoff solenoid		+ Tolerance mm : 0.4
Volt	: 12	† Shutoff solenoid
	555	† Volt : 12
Rated speed rpm	: 550	†
Del. quantity	. 4 5	CTART TRANSFERAN
cm3/1000 strokes Tolerance	: 1.5	+ START TRANSITION
cm3/1000 strokes	: 1.5	Rated speed rpm : 450
Check tolerance	, 1.5	Del. quantity
cm3/1000s.	: 1.5	+ cm3/1000 strokes : 60.0
Shutoff solenoid	,,,,	Tolerance
Volt	: 12	+ cm3/1000 strokes : 10.0
		+ Shutoff solenoid
		† Volt : 12
		+
		Data dama da 250
CUECKANO I OAN NED	CNINCINT	Rated speed rpm : 250
CHECKING LOAD-DEP START OF DELIVERY		+ Del. quantity + cm3/1000 strokes : 85.0
START OF DELIVERT		Tolerance
DELIVERY DIFFEREN	CE	cm3/1000 strokes : 25.0
	· •	+ Shutoff solenoid
Rated speed rpm	: 1200	+ Volt : 12
Del. quantity		+
cm3/1000 strokes	: -16.0	
Tolerance		+ ASSEMBLY AND ADJUSTMENT DIMENSIONS
cm3/1000 strokes	; 4.0	†
Check tolerance		† 100/
cm3/1000s.	: 4.0	+ LDA/
Shutoff solenoid	: 12	+ HBA stroke mm : 5.0 + Dimension K mm : 3.3
Volt	• 16	Tolerance mm : +-0,1
TIMING-DEVICE TRAV	VEL DIFFERENCE	Dimension KF mm : 6,0,
I THERE AFATOR INC.		+ Tolerance mm : +-0,2
Rated speed rpm	: 1200	+ Dimension MS mm : 0.8
Del. quantity		+ Tolerance mm : +-0,2
cm3/1000 strokes	: -0.9	+
		+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06,12,95 Edition : ISO 4113 Test oil

: 0 460 404 075 Part no. Pump designation: VE4/10F2100L503

Customer-spec. information

Customer ; VM

: HR 425 SLIRF Motor 90.0 Power KW

TEST BENCH REQUIREMENTS

Overflow

0.75 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

500 Rated speed rpm

Aneroid pressure

1000 hPa

Setting mm 7.7 Tolerance mm 0.2 Shutoff solenoid 12 Volt

SUPPLY PUMP PRESSURE

500 Rated speed rpm Aneroid pressure

1000 hPa

5.9 Setting hPa Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

1500 Rated speed rpm :

Aneroid pressure

1000 hPa

Del. quantity cm3/1000 strokes :

66.0 Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 3.0 Check tolerance

cm3/1000s. Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

3.0

Rated speed rpm 700

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

12 Volt

Check tolerance

3.0 cm3/1000s.

IDLE SETTING

Rated speed rpm 450

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt

12

Spread

3.0 cm3/1000 strokes :

Check tolerance

cm3/1000s. 3.0

FULL-LOAD SPEED F	REGULATION	+ Shutoff solenoid		
		Volt	:	12
Rated speed rpm Pressure hPa	: 2300 : 100	O + Timing device		
Del. quantity	. 70	+ solenoid Volt	:	100
cm3/1000 strokes Tolerance	: 38.	Rated speed rpm	:	1000
cm3/1000 strokes Shutoff solenoid	: 3.	O Aneroid pressure hPa	:	1000
Volt	: 1	2	•	
CTADITANO FUEL NEL	TUEDY	+ SV travel mm	:	9.0 0.5
STARTING FUEL DEL	TAEK!	+ Tolerance mm + Check	•	0.5
Rated speed rpm	: 100	tolerance mm Shutoff solenoid	:	0.7
Del. quantity cm3/1000 strokes	: 65.		•	12
Tolerance	. 17	0 + 0-4-4		1000
cm3/1000 strokes Shutoff solenoid		+ Aneroid pressure	•	1000
Volt	: 1	2 hPa	:	1000
		F SV travel mm	:	0.3
		+ Tolerance mm + Check	:	0.3
		tolerance mm	:	0.3
INJECTION-PUMP TE	ST SPECIFI	CATIONS + Shutoff solenoid + Volt	:	12
TIMING DEVICE CHA	RACTERISTI	c +	•	12
Rated speed rpm	: 2100	+ Timing device + solenoid Volt	:	100
Aneroid pressure		+		
hPa	: 100	O + SUPPLY PUMP PRESSI	JRE CI	HARACTERISTIC
SV travel mm	: 9.		: 6	2100
Tolerance mm Check	: 0.	5 + Aneroid pressure + hPa	:	1000
tolerance mm			-	
	: 0.			
Shutoff solenoid		+ pressure bar	:	8.0
Shutoff solenoid Volt	: 1	pressure bar Tolerance hPa Shutoff solenoid	•	8.0 0.3
Shutoff solenoid Volt Rated speed rpm		pressure bar Tolerance hPa	•	8.0
Shutoff solenoid Volt	: 1	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm	•	8.0 0.3
Shutoff solenoid Volt Rated speed rpm Aneroid pressure	: 150 : 100 : 5.	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	•	8.0 0.3 12
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm	: 1 : 150 : 100	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp		8.0 0.3 12 150 1000
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm	: 150 : 100 : 5.	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa	:	8.0 0.3 12 150
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: 150 : 100 : 5. : 1.	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid		8.0 0.3 12 150 1000 4.8 0.8
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: 150 : 100 : 5. : 1.	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt	•	8.0 0.3 12 150 1000 4.8 0.8
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	: 150 : 100 : 5. : 1.	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Rated speed rpm	•	8.0 0.3 12 150 1000 4.8 0.8
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: 150 : 100 : 5. : 1.	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	•	8.0 0.3 12 150 1000 4.8 0.8
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	: 150 : 150 : 100 : 5. : 1. : 1. : 2100	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp	: : : 1	8.0 0.3 12 150 1000 4.8 0.8 12
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm	: 150 : 150 : 100 : 5. : 1. : 1. : 2100 : 100	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Supply pomp Tolerance hPa	: : : 1	8.0 0.3 12 150 1000 4.8 0.8 12 1000
Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm	: 150 : 150 : 100 : 5. : 1. : 1. : 2100 : 100 : 0.	pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Supply pomp pressure bar Supply pomp Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : 1	8.0 0.3 12 150 1000 4.8 0.8 12 1000 1000 6.5

OVERFLOW QUANTITY	•		‡	Check tolerance cm3/1000s. Shutoff solenoid	:	2.5	
Rated speed rpm Aneroid pressure	:	700	Ī	Volt	:	12	
hPa	:	1000	+	Rated speed rpm Aneroid pressure	:	2100	
Overflow quantity ccm/10s	:	83.3	Ŧ	hPa	:	1000	
Tolerance ccm/10s	:	55.5	Ŧ	Del. quantity cm3/1000 strokes Tolerance	:	63.5	
Check tolerance ccm/10s		55.5	Ŧ	cm3/1000 strokes Check tolerance	:	1.5	
Shutoff solenoid	•		Ŧ	cm3/1000s.	:	3.0	
Volt	•	12	Ŧ	Shutoff solenoid Volt	•	12	
Rated speed rpm Aneroid pressure	:	2100	‡	Rated speed rpm	:	700	
hPa Overflow quantity	•	1000	‡	Aneroid pressure hPa	:	1000	
ccm/10s Tolerance	:	111.1	‡	Del. quantity cm3/1000 strokes	:	69.0	
ccm/10s	:	55.5	‡	Tolerance cm3/1000 strokes	:	1.5	
Check tolerance ccm/10s	:	55.5	‡	Check tolerance cm3/1000s.	:	3.0	
Shutoff solenoid Volt	;	12	‡	Shutoff solenoid Volt	:	12	
DELIVERY AND BREA	KAWA		<u>†</u>	Rated speed rpm	:	1500	
Rated speed rpm	•	2300	İ	Aneroid pressure	:	1000	
Aneroid pressure	:	1000	1	Del. quantity cm3/1000 strokes	-	66.0	
Del. quantity cm3/1000 strokes		38.0	Ŧ	Tolerance cm3/1000 strokes		0.5	
Tolerance			Ŧ	Check tolerance			
cm3/1000 strokes Check tolerance	:	3.0	Ŧ	cm3/1000s. Shutoff solenoid	:	2.0	
cm3/1000S. Shutoff solenoid	•	4.0	‡	Volt	•	12	
Volt	:	12	‡			·	
Rated speed rpm Aneroid pressure	•	2460	‡	ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	STOP	
hPa Del. quantity	:	1000	‡	Rated speed rpm	:	450	
cm3/1000 strokes Check tolerance	:	7.5	‡	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000S. Shutoff solenoid	:	4.0	‡	Tolerance cm3/1000 strokes	:	1.5	
Volt	:	12	‡	Check tolerance cm3/1000s.	:	1.5	
Rated speed rpm Aneroid pressure	:	700	‡		•		
hPa Del. quantity	:	400	Ì	IDLE DELIVERY			
cm3/1000 strokes Tolerance	:	54.0	$\frac{1}{2}$	Rated speed rpm Del. quantity	:	800	
cm3/1000 strokes	:	0.5	Ţ	cm3/1000 strokes	:	4.0	

Tolerance		
cm3/1000 strokes	:	2.5
Check tolerance		
cm3/1000s.	:	4.0
Shutoff solenoid		
Volt	;	12
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	;	6.0
Tolerance		
cm3/1000 strokes	:	2.5
Check tolerance		
cm3/1000s.	:	5.0
Shutoff solenoid		
Volt	•	12
	•	

EXHAUST-GAS RECIR	CUL	ATION	
Rated speed rpm Aneroid pressure	:	1000	
hPa	:	1000	
Del. quantity cm3/1000 strokes	:	50.0	
Tolerance cm3/1000 strokes	:	1.0	
Check tolerance cm3/1000s.	:	2.5	
Shutoff solenoid Volt	:	12	
START TRANSITION			
Rated speed rpm	:	550	
Del. quantity cm3/1000 strokes	:	40.0	
Tolerance cm3/1000 strokes	:	10.0	
Shutoff solenoid Volt	:	12	
Rated speed rpm Del. quantity	:	400	
cm3/1000 strokes	:	65.0	
cm3/1000 strokes Shutoff solenoid	:	17.0	
Volt	:	12	
ASSEMBLY AND ADJUS	STME	NT DIMENSIONS	

Dimension K mm : 3,7
Tolerance mm : +-0,1

Dimension KF mm	: 5,2
Tolerance mm	: +-0,2
KSB travel mm	: 8,5

POTENTIOMETER SET

1. measurement : 5,0 voltage Volt 1. measurement : 2,31 voltage Volt

MICROSWITCH SET

: ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 43.2..45,2

Control lever

position YB mm : 23,5..30,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.04.95 Test oil : ISO 4113

Part no. : 0 460 404 083 Pump designation: VE4/10F2100L503-1

Customer-spec. information : VM Customer

Motor : HR 425 SLIRF

Power KW 85.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

restriction mm 0.75

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter: x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 500 Aneroid pressure

hPa 1000

7.7 Settina mm Tolerance mm 0.2 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 500

Aneroid pressure

hPa 1000

5.9 Setting hPa Tolerance hPa 0.3 Shutoff solenoid

12 Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

1500 Rated speed rpm :

Aneroid pressure

1000 hPa

Del. quantity

cm3/1000 strokes : 66.0 Tolerance

cm3/1000 strokes :

0.5 Spread

cm3/1000 strokes :

3.0 Check tolerance

cm3/1000s.

3.0

Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 700

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s. 3.0

IDLE SETTING

Rated speed rpm 450

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

Spread cm3/1000 strokes	•	3.0	+Tolerance mm+Check	:	0.5	
Check tolerance cm3/1000s.		3.0	tolerance mm Shutoff solenoid	:	0.5	
CIIO7 10000 C	•	3.0	Volt	:	12	
FULL-LOAD SPEED F	REGUI		Timing device solenoid Volt	:	100	
Rated speed rpm Pressure hPa	:	2300 1000	Rated speed rpm		1000	
Del. quantity cm3/1000 strokes Tolerance	:	38.0	+ Aneroid pressure + hPa	:	1000	
cm3/1000 strokes	•	3.0	T SV travel mm	:	9.0	
Shutoff solenoid	•	0.0	+ Tolerance mm	:	0.5	
Volt	:	12	Check tolerance mm	:	0.7	
STARTING FUEL DEL	IVE	RY	+ Shutoff solenoid + Volt	•	12	
Rated speed rpm	:	100	1	•	14	
Del. quantity cm3/1000 strokes		65.0	Rated speed rpm Aneroid pressure	:	1000	
Tolerance cm3/1000 strokes		17.0	hPa	:	1000	
Shutoff solenoid	•		→ SV travel mm	:	0.3	
Volt	:	12	Tolerance mm Check	:	0.3	
			tolerance mm Shutoff solenoid	:	0.3	
			Volt	:	12	
INJECTION-PUMP TE	ST S	SPECIFICATI	DNS Timing device solenoid Volt	•	100	
TIMING DEVICE CHA	RACT	TERISTIC	SUPPLY PUMP PRESS	SURE	CHARACTER]	ISTIC
Rated speed rpm Aneroid pressure	:	2100	Rated speed rpm	:	2100	
hPa	:	1000	+ Aneroid pressure			
Tolerance mm Check	•	0.5	+ hPa + Supply pomp	:	1000	
tolerance mm	:	0.7	+ pressure bar	:	8.0	
Shutoff solenoid Volt		12	+ Tolerance hPa + Shutoff solenoid	:	0.3	
	•	150	Volt	:	12	
Rated speed rpm Aneroid pressure	:		Rated speed rpm Aneroid pressure	:	150	
hPa	•	1000	+ hPa	:	1000	
SV travel mm Tolerance mm		5.5 1.8	+ Supply pomp + pressure bar	•	4.8	
Check	•	1.0	Tolerance hPa	:	0.8	
tolerance mm Shutoff solenoid	:	1.8	Shutoff solenoid Volt	•	12	
Volt	:	12	Rated speed rpm	:	1000	
Rated speed rpm	:	2100	+ Aneroid pressure	٠		
Aneroid pressure	:	1000	hPa Supply pomp	:	1000	
SV travel mm	:	0.5	pressure bar Tolerance hPa	:	6.5 0.3	
			•			

Shutoff solenoid Volt	: 12	Aneroid pressure hPa : 400	
OVERFLOW QUANTITY	,	LDA/ HBA stroke mm : 6.7	
Rated speed rpm Aneroid pressure		Del. quantity cm3/1000 strokes : 54.0	
hPa Overflow quantity	: 1000	Tolerance cm3/1000 strokes : 0.5	
ccm/10s Tolerance	: 111.1 : 55.5	+ Check tolerance + cm3/1000s. : 2.5	
ccm/10s Check tolerance	; 33,3	Shutoff solenoid Volt : 12	
ccm/10s Shutoff solenoid	: 55.5	Rated speed rpm : 2100 Aneroid pressure	
Volt	: 12	hPa : 1000 + Del. quantity	
Rated speed rpm Aneroid pressure		+ cm3/1000 strokes : 63.5 + Tolerance	
hPa Overflow quantity	: 1000	+ cm3/1000 strokes : 1.5 Check tolerance	
ccm/10s Tolerance ccm/10s	: 83.3 : 55.5	+ cm3/1000s. : 3.0 + Shutoff solenoid + Volt : 12	
Check tolerance	. 55.5	Rated speed rpm : 700	
ccm/10s Shutoff solenoid	: 55.5	Aneroid pressure hPa : 1000	
Volt	: 12	Del. quantity cm3/1000 strokes : 69.0	
	KAWAY CHARACTERISTIC	Tolerance : 1.5	
Rated speed rpm Aneroid pressure hPa	: 2300 : 1000	+ Check tolerance + cm3/1000s. : 3.0 + Shutoff solenoid	
Del. quantity cm3/1000 strokes		Volt : 12	
Tolerance cm3/1000 strokes		Rated speed rpm : 1500 Aneroid pressure	
Check tolerance cm3/1000s.	: 4.0	hPa : 1000 Del. quantity	
Shutoff solenoid Volt	: 12	cm3/1000 strokes : 66.0 Tolerance cm3/1000 strokes : 0.5	
Rated speed rpm Aneroid pressure	: 2460	Check tolerance cm3/1000s. : 2.0	
hPa Del. quantity	: 1000	Shutoff solenoid Volt : 12	
cm3/1000 strokes Check tolerance		+	
cm3/1000s. Shutoff solenoid	: 4.0	ELECTR. SHUTOFF	
Volt Rated speed rpm	: 12 : 700	CONTROL LEVER, IDLE STOP Rated speed rpm : 450	
Haroa speca i pili		· · · · · · · · · · · · · · · · · · ·	
		+ Del. quantity + cm3/1000 strokes : 1.5 + Tolerance	

Check tolerance cm3/1000s.	:	1.5	
Spread cm3/1000 strokes	:	5.0	
FULL-LOAD STOP CO	NTROL	LEVER	
Rated speed rpm Del. quantity	:	450	
cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes	:	1.5	
Spread cm3/1000 strokes	•	5.0	
Check tolerance cm3/1000s.	:	1.5	
Spread cm3/1000 strokes	:	5.0	
IDLE DELIVERY			
Rated speed rpm Del. quantity	:	800	
cm3/1000 strokes	:	4.0	
Tolerance cm3/1000 strokes	:	2.5	
Check tolerance cm3/1000S.	:	4.0	
Shutoff solenoid Volt	:	12	
Rated speed rpm	:	500	
Del. quantity cm3/1000 strokes	:	6.0	
Tolerance cm3/1000 strokes Check tolerance	:	2.5	
cm3/1000s.	:	5.0	
Shutoff solenoid Volt	:	12	

Volt	:	12	
EXHAUST-GAS RECIR	CULA	ATION	
Rated speed rpm	:	1000	
Aneroid pressure	:	1000	
Del. quantity cm3/1000 strokes	:	50.0	
Tolerance cm3/1000 strokes	:	1.0	
Check tolerance cm3/1000s.	:	2.5	
Shutoff solenoid Volt	:	12	

START TRANSITION	
Rated speed rpm	: 550
Del. quantity cm3/1000 strokes	: 40.0
Tolerance cm3/1000 strokes Shutoff solenoid	: 10.0
Volt	: 12
Data dan and ann	
Rated speed rpm Del. quantity	: 400
cm3/1000 strokes Tolerance	: 65.0
cm3/1000 strokes Shutoff solenoid	: 17.0
Volt	: 12
ASSEMBLY AND ADJU	STMENT DIMENSIONS
LDA/ HBA stroke mm Dimension K mm Tolerance mm Dimension KF mm Tolerance mm Dimension MS mm Tolerance mm	: 6.7 : 3,3 : +-0,1 : 5,4 : +-0,2 : 0,8 : +-0,2
POTENTIOMETER SET	
 measurement voltage Volt 	: 5,0
 measurement voltage Volt 	: 2,31
MICROSWITCH SET	
	: ARF 12,0
CONTROL LEVER POS SET	ITION
Control lever position YA mm	: 43,245,2

+ End of test-specification sheet

: 23,5..30,5

Control lever position YB mm

Note remarks

Test oil

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.06.93

: 0 460 414 101 Part no. Pump designation : VE4/11F1900L519

: ISO 4113

Customer-spec. information : PENTA Customer Motor : TAMD 31 96.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance °C 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35Tolerance bar 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

250 bar Tolerance bar 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840 :

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0.3 : +-0,02 Tolerance mm

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rom

Aneroid pressure

1000 hPa

Setting mm 2.0 Tolerance mm 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Aneroid pressure

1000 hPa

Setting hPa 6.7 Tolerance hPa 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1500 :

Aneroid pressure

hPa 1000 Del. quantity

cm3/1000 strokes : 57.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 5.0

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

650 Rated speed rpm

Del. quantity cm3/1000 strokes : 35.0

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s. 5.0 :

IDLE SETTING

Rated speed rpm 300

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : 2.0

Spread

cm3/1000 strokes : 6.0

Check tolerance cm3/1000s.	: REGUI	6.0 LATION	† † †	Supply pomp pressure bar Tolerance hPa OVERFLOW QUANTITY	:	4.1 0.3
Rated speed rpm	;	2150	‡	Rated speed rpm		650
Pressure hPa Del. quantity	:	1000	‡	Overflow quantity ccm/10s	:	63.8
cm3/1000 strokes Tolerance		22.0	‡	Tolerance ccm/10s	:	22.2
cm3/1000 strokes STARTING FUEL DEL		3.0	7	Check tolerance		22.2
STARTING FUEL DEL	TAE	X I	Ī	CUM/ TUS	:	22.2
Rated speed rpm Del. quantity	:	100	‡	Rated speed rpm Aneroid pressure	:	1900
cm3/1000 strokes Tolerance	:	45.0	‡	hPa Overflow quantity	:	1000
cm3/1000 strokes	:	25.0	1	ccm/10s Tolerance	:	97.2
			+	ccm/10s	:	41.6
INJECTION-PUMP TE		SPECIFICATION		Check tolerance ccm/10s	:	41.6
1140 2011014 10111 12	.01	SECTI TORITOR	Ţ	DELIVERY AND BREAK	<awa< td=""><td>Y CHARACTERISTIC</td></awa<>	Y CHARACTERISTIC
TIMING DEVICE CHA	RACT	TERISTIC	‡	Rated speed rpm	:	2150
Rated speed rpm Aneroid pressure	:	1900	†	Aneroid pressure hPa	:	1000
hPa	•	1000	<u> </u>	Del. quantity cm3/1000 strokes		22.0
SV travel mm Tolerance mm	•	4.4 0.4	İ	Tolerance cm3/1000 strokes		3.0
Check tolerance mm	:	0.7	1	Check tolerance cm3/1000s.	•	4.0
	•		Ŧ		•	
Rated speed rpm Aneroid pressure	:	1700	‡	Rated speed rpm Aneroid pressure	:	2250
hPa	:	1000	‡	hPa Del. quantity	:	1000
SV travel mm Tolerance mm	:	3.1 0.5	‡	cm3/1000 strokes Tolerance	:	1.5
Check tolerance mm	:	0.7	‡	cm3/1000 strokes Check tolerance	:	1.5
SUPPLY PUMP PRESS	URE	CHARACTERIST]		cm3/1000s.	:	1.5
Rated speed rpm	:	1900	‡	Rated speed rpm Aneroid pressure	:	900
Aneroid pressure hPa	:	1000	<u> </u>	hPa	:	300
Supply pomp	~		+	LDA/		
pressure bar Tolerance hPa	:	8.0 0.3	‡	HBA stroke mm Del. quantity	:	7,5
Rated speed rpm	:	750	‡	cm3/1000 strokes Tolerance	•	47.0
Aneroid pressure hPa	:	1000	‡	cm3/1000 strokes Check tolerance	:	0.5
		_	+	cm3/1000s.	:	3.0

Dated speed page		1000	+ Del. quantity
Rated speed rpm Aneroid pressure	:	1900	+ cm3/1000 strokes : 1.5 + Tolerance
hPa	:	1000	- cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes	:	55.0	+ Check tolerance + cm3/1000s. : 1.5
Tolerance		4 5	Spread
cm3/1000 strokes Check tolerance	:	1.5	+ cm3/1000 strokes : 5.0 + Shutoff solenoid
cm3/1000s.	:	3.0	+ Volt : 12
Rated speed rpm	:	1200	Ţ
Aneroid pressure		4000	IDLE DELIVERY
hPa Del. quantity	•	1000	Rated speed rpm : 400
cm3/1000 strokes	:	58.5	+ Del. quantity
Tolerance cm3/1000 strokes	:	2,5	t cm3/1000 strokes : 1.5 Tolerance
			- cm3/1000 strokes : 1.5
Rated speed rpm Aneroid pressure	•	750	+ Check tolerance + cm3/1000s. : 1.5
hPa	:	1000	+
Del. quantity cm3/1000 strokes	•	58.5	+ Rated speed rpm : 250 + Del. quantity
Tolerance			+ cm3/1000 strokes : 23.0
cm3/1000 strokes	:	2.5	+ Tolerance + cm3/1000 strokes : 6.0
Rated speed rpm	:	1500	
Aneroid pressure hPa	:	1000	‡
Del. quantity			+
cm3/1000 strokes Tolerance	:	57.0	‡
cm3/1000 strokes	:	0.5	START TRANSITION
Check tolerance cm3/1000s.	:	2.5	Rated speed rpm : 500
			Del. quantity
MECHANICAL SHUTOF	F		
		4000	cm3/1000 strokes : 15.0
Rated speed rpm Aneroid pressure	•	1900	‡
hPa	:	1000	Rated speed rpm : 300
Del. quantity cm3/1000 strokes	:	1.5	<pre>+ Del. quantity + cm3/1000 strokes : 80.0</pre>
Tolerance		1.5	Tolerance cm3/1000 strokes : 20.0
cm3/1000 strokes Spread	•		T CIII3/ TODO SCROKES : 20.0
cm3/1000 strokes	:	5.0	ASSEMBLY AND ADJUSTMENT DIMENSIONS
Check tolerance cm3/1000s.	:	1.5	T MOSEMBEL MIAN MONOSTMENT DIMENSTONS
Spread cm3/1000 strokes		5.0	LDA/
CIIIS/ TUUU STFOKES	ě	ن. ر	+ HBA stroke mm : 7,5
			Dimension KF mm : 5,4 Tolerance mm : +-0,2
ELECTO CUITALE			
ELECTR. SHUTOFF CONTROL LEVER, ID	LE ST	TOP	
	LE ST	TOP 300	Tolerance mm : 1,3 + Tolerance mm : +-0,2 + SVS dimension mm : 7,5

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,2..39,2

tontrol lever
position YB mm : 53,0..61,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.07.95 Test oil : ISO 4113

Part no. : 0 460 485 031 Pump designation : VE5/8F2100L525-6

Customer-spec. information
Customer : VW
Motor : 2,4l SD
Power KW : 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 4.3
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 7.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 35.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0

Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 540
Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 strokes : 0.5

Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid

12

STARTING FUEL DELIVERY

Volt

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 55.0

Tolerance cm3/1000 strokes : 20.0

Shutoff solenoid			+				
Volt	:	12	1	Rated speed rpm Supply pomp	:	1790	
			+	pressure bar	:	8.1	
			+	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST	ART	OF DELIVERY	+	Shutoff solenoid		40	
SETTING			İ	Volt	:	12	
DELIVERY DIFFEREN	ICE		I	Rated speed rpm	:	1100	
	_		+	Supply pomp	•	. ,	
Rated speed rpm	:	1500	+	pressure bar	:	6.2	
Del. quantity		7.0	+	Tolerance hPa	:	0.3	
cm3/1000 strokes Tolerance	:	-7.0	Í	Shutoff solenoid Volt		12	
cm3/1000 strokes	:	1.0	I	VOCC	•	12	
Shutoff solenoid	•		+	OVERFLOW QUANTITY			
Volt	:	12	+				
			†		:	2100	
PRESSURE DIFFEREN	ILE		T.	Overflow quantity ccm/10s	:	97.2	
Rated speed rpm	:	1500	I	Tolerance	•	71.6	
Del. quantity	•	1500	1	ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.2	+				
Tolerance		2.4	+	Check tolerance			
cm3/1000 strokes Shutoff solenoid	:	0.1	Ť	ccm/10s Shutoff solenoid	:	55.5	
Volt		12	I	Volt	:	12	
VO(1	•		1	1000	•	,,,	
TIMING-DEVICE TRA	VEL	DIFFERENCE	+	Rated speed rpm	;	600	
~		4500	+	Overflow quantity		47.0	
Rated speed rpm	:	1500	†	ccm/10s	:	63.8	
Del. quantity cm3/1000 strokes		-1.2	Ī	Tolerance ccm/10s	:	22.2	
Tolerance	•	,,,	1	CCIII/ 103	•		
cm3/1000 strokes		0.1	+	Check tolerance			
Shutoff solenoid		4.0	+	ccm/10s	:	34.7	
Volt	:	12	†	Shutoff solenoid		12	
			I	Volt	:	12	
INJECTION-PUMP TE	ST	SPECIFICATIONS	+	DELIVERY AND BREAK	<awa< td=""><td>AY CHARACT</td><td>TERISTIC</td></awa<>	AY CHARACT	TERISTIC
TIMINO NEUTOE CUA	D 4 C	TEDICTIC	†	Datad ansad		2/.00	
TIMING DEVICE CHA	KAU	IEKTO ITC	Ī	Rated speed rpm Del. quantity	:	2400	
Rated speed rpm	:	1790	I	cm3/1000 strokes	:	12.0	
Tolerance mm	:	0.4	+	Tolerance	Ĭ		
Check			+	cm3/1000 strokes	:	2.0	
tolerance mm	:	0.7	†	Check tolerance		/ 0	
Shutoff solenoid Volt	:	12	Ī	cm3/1000S. Shutoff solenoid	•	4.0	
VOCE	•	12	Ţ	Volt	:	12	
Rated speed rpm	:	1100	+				
			+	Rated speed rpm	:	2300	
SV travel mm	:	1.6	†	Del. quantity		22.0	
Tolerance mm Check	•	0.4	Ī	cm3/1000 strokes Tolerance	•	22.0	
tolerance mm	:	0.7	Ţ	cm3/1000 strokes	:	5.0	
Shutoff solenoid	-		+	Check tolerance			
Volt	:	12	+	cm3/1000s.	:	6.0	
CLIDDLY DUMP DOCCO	וטר	CUADACTERICTIC	†	Shutoff solenoid		12	
SUPPLY PUMP PRESS	UKE	CHARACTERISTIC	+	Volt	;	12	

Data di successi successi		3/00	+	Shutoff solenoid	1	42
Rated speed rpm Del. quantity			‡	Volt	•	12
cm3/1000 strokes Tolerance		3.0	‡	ELECTR. SHUTOFF		
cm3/1000 strokes Check tolerance	:	3.0	‡	CONTROL LEVER, 1	IDLE	STOP
cm3/1000S. Shutoff solenoid	:	3.0	1	Rated speed rpm Del. quantity	:	415
Volt	:	12	1	cm3/1000 strokes	:	1.5
Rated speed rpm Del. quantity	:	2100	+	cm3/1000 strokes		1.5
cm3/1000 strokes	:	29.5	Ŧ	cm3/1000s.	:	1.5
Tolerance cm3/1000 strokes	:	1.0	Ŧ	Spread cm3/1000 strokes	:	5.0
Check tolerance cm3/1000S.	;	2.2	‡	FULL-LOAD STOP O	ONTR	OL LEVER
Shutoff solenoid Volt	:	12	‡	Rated speed rpm	:	415
Rated speed rpm	:	1850	‡	Del. quantity cm3/1000 strokes	:	1.5
Del. quantity cm3/1000 strokes	:	32.5	‡	Tolerance cm3/1000 strokes	:	1.5
Tolerance cm3/1000 strokes	:	3.0	‡	Spread cm3/1000 strokes	:	5.0
Shutoff solenoid Volt	:	12	‡	Check tolerance cm3/1000s.	:	1.5
Rated speed rpm	:	600	‡	Spread cm3/1000 strokes	:	5.0
Del. quantity cm3/1000 strokes		33.3	‡			
Tolerance cm3/1000 strokes		1.5	<u>†</u>			
Check tolerance cm3/1000S.	•	3.0	İ			
Shutoff solenoid	•	12	Ŧ	CHECKING LOAD-DE		ENT
Volt	:		Ŧ			
Rated speed rpm Del. quantity			Ŧ	DELIVERY DIFFERE		4500
cm3/1000 strokes Tolerance		35.5	‡	Rated speed rpm Del. quantity		
cm3/1000 strokes Check tolerance	:	0.5	‡	cm3/1000 strokes Tolerance		
cm3/1000S. Shutoff solenoid	:	2.2	‡	cm3/1000 strokes Check tolerance	:	3.0
Volt	:	12	‡	cm3/1000s. Shutoff solenoid	:	4.0
MECHANICAL SHUTOF	 F			Volt	:	12
Rated speed rpm		2100	1	TIMING-DEVICE TR	AVEL	DIFFERENCE
Del. quantity cm3/1000 strokes		1.5	\pm	Rated speed rpm Del. quantity	:	1500
Tolerance		1.5	-	cm3/1000 strokes	:	-1.2
cm3/1000 strokes Check tolerance			Ŧ	cm3/1000 strokes	:	0.1
cm3/1000s.	:	1.5	‡	Check tolerance cm3/1000s.	:	0.1

Shutoff solenoid 12 Volt

DELIVERY DIFFERENCE

1500 Rated speed rpm Del. quantity cm3/1000 strokes : 1.5

Tolerance cm3/1000 strokes : 1.5

Check tolerance cm3/1000s. 1.5 Shutoff solenoid Volt 12

PRESSURE DIFFERENCE

1500 Rated speed rpm

Supply pomp

-1.0pressure bar Tolerance hPa 0.2

Shutoff solenoid

12 Volt

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1500 Tolerance mm 0.2 Check

tolerance mm 0.6

Shutoff solenoid

Volt 12

START TRANSITION

380 Rated speed rpm

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

10.0 cm3/1000 strokes :

Shutoff solenoid

12 Volt

Rated speed rpm 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes 25.0

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 : +-0,1 Tolerance mm : 5,8 Dimension KF mm : +-0,2 Tolerance mm

G05

Dimension MS mm : 1,4 : +-0,2 Tolerance mm

POTENTIOMETER

SET

1. measurement

voltage Volt : 5,0

1. measurement

voltage Volt : 0,7

CONTROL LEVER POSITION

Control lever

: 32,8..34,8 position YA mm

Control lever

: 61,5..68,5 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 25.01.96 Test oil : ISO 4113

: 0 460 426 219 Part no. Pump designation : VE6/12F1950L528

Customer-spec. information Customer : PENTA Motor : KAD 42 Power KW 169.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance °C

Overflow

restriction mm 0.75

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 110 assembly

Opening pressure

250 bar Tolerance bar

Test lines : 1 680 750 000

Outside diameter : 6.00

2.00 x inside diameter: x length mm 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,3 Tolerance mm : +-0,02

Check

: +-0,04 tolerance mm

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1500

Aneroid pressure

1500 :

Setting mm 3.2 Tolerance mm 0.1

SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Aneroid pressure

1500 hPa

Setting hPa 8.3

Tolerance hPa 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

1800 Rated speed rpm

Aneroid pressure

1500

Del. quantity

cm3/1000 strokes : 89.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

Check tolerance

5.0 cm3/1000s.

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 600

Del. quantity

cm3/1000 strokes : 42.5

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm 325

Del. quantity

cm3/1000 strokes : 9.0

Tolerance

cm3/1000 strokes : 0.5

Spread cm3/1000 strokes : 5.0

GO6

Check tolerance			+ Supply pomp	
cm3/1000S.	:	5.0	+ pressure bar : 7.6	
	•		+ Tolerance hPa : 0.3	
			+	
FULL-LOAD SPEED F	REGU	LATION	OVERFLOW QUANTITY	
			1	
Rated speed rpm	:	2180	+ Rated speed rpm : 600	
Pressure hPa	:	1500	+ Aneroid pressure	
Del. quantity			+ hPa : 1500	
cm3/1000 strokes	:	12.0	<pre>+ Overflow quantity</pre>	
Tolerance			+ ccm/10s : 111.1	
cm3/1000 strokes	:	2.0	+ Tolerance	
			+ ccm/10s : 22.2	
STARTING FUEL DEL	IVE	RY	}	
			+ Check tolerance	
Rated speed rpm	:	100	+ ccm/10s : 22.2	
Del. quantity			+	
cm3/1000 strokes	:	62.0	+ Rated speed rpm : 1950	
Tolerance			+ Aneroid pressure	
cm3/1000 strokes	:	20.0	+ hPa : 1500	
			+ Overflow quantity	
			+ ccm/10s : 138.8	
			+ Tolerance	
			+ ccm/10s : 41.6	
			- +	
INJECTION-PUMP TE	ST	SPECIFICATIONS	+ Check tolerance	
			+ ccm/10s : 41.6	
TIMING DEVICE CHA	RAC	TERISTIC .	THE THEORY AND DEFAUALISM OF THE TOTAL	
		4000	+ DELIVERY AND BREAKAWAY CHARACTERIS	IIC
Rated speed rpm	:	1800	† a	
Aneroid pressure		4500	+ Rated speed rpm : 2180	
hPa	:	1500	+ Aneroid pressure	
			+ hPa : 1500	
SV travel mm	:	4.9	+ Del. quantity	
Tolerance mm	:	0.4	+ cm3/1000 strokes : 12.0 + Tolerance	
Check tolerance mm		0.7	+ cm3/1000 strokes : 2.0	
toterance mm	:	U. 7	Check tolerance	
Rated speed rpm	:	1250	+ cm3/1000s. : 6.0	
Aneroid pressure	•	1230	T (11137 10003 0.0	
hPa	_	1500	Rated speed rpm : 2050	
			T Nated Speed I Div . E000	
	:	1,000		
	•		Aneroid pressure	
SV travel mm	:	1.4	Aneroid pressure + hPa : 1500	
SV travel mm Tolerance mm	:		Aneroid pressure hPa : 1500 Del. quantity	
SV travel mm Tolerance mm Check	:	1.4 0.4	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0	
SV travel mm Tolerance mm	:	1.4	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance	
SV travel mm Tolerance mm Check tolerance mm	: :	1.4 0.4 0.7	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0	
SV travel mm Tolerance mm Check	: : : : URE	1.4 0.4 0.7	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS		1.4 0.4 0.7 CHARACTERISTIC	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm	: : : URE	1.4 0.4 0.7	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS		1.4 0.4 0.7 CHARACTERISTIC	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa		1.4 0.4 0.7 CHARACTERISTIC 1800	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure		1.4 0.4 0.7 CHARACTERISTIC 1800	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300 Aneroid pressure hPa : 1500 Del. quantity	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp		1.4 0.4 0.7 CHARACTERISTIC 1800 1500	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300 Aneroid pressure hPa : 1500	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	:	1.4 0.4 0.7 CHARACTERISTIC 1800 1500 9.2	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar	:	1.4 0.4 0.7 CHARACTERISTIC 1800 1500 9.2	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Rated speed rpm Aneroid pressure	:	1.4 0.4 0.7 CHARACTERISTIC 1800 1500 9.2 0.3	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Rated speed rpm	:	1.4 0.4 0.7 CHARACTERISTIC 1800 1500 9.2 0.3	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5	
SV travel mm Tolerance mm Check tolerance mm SUPPLY PUMP PRESS Rated speed rpm Aneroid pressure hPa Supply pomp pressure bar Tolerance hPa Rated speed rpm Aneroid pressure	:	1.4 0.4 0.7 CHARACTERISTIC 1800 1500 9.2 0.3	Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. : 8.0 Rated speed rpm : 2300 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance	

Rated speed rpm		800	+				
Aneroid pressure hPa	:	750	‡	MECHANICAL SHUTO	FF		
LDA/			‡	Rated speed rpm		1953	
HBA stroke mm Del. quantity	:	7,5	‡	Aneroid pressure hPa	:	1500	
cm3/1000 strokes Tolerance	:	65.0	1	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000 strokes Check tolerance	:	0.5	<u> </u>	Tolerance cm3/1000 strokes		1.5	
cm3/1000s.	:	4.0	1	Spread cm3/1000 strokes		5.0	
Rated speed rpm	:	1950	Ŧ	Check tolerance		1.5	
Aneroid pressure hPa	:	1500	‡	cm3/1000S. Spread	:		
Del. quantity cm3/1000 strokes	:	88.0	‡	cm3/1000 strokes	:	5.0	
Tolerance cm3/1000 strokes	:	2.0	† †	ELECTR. SHUTOFF			
Check tolerance cm3/1000s.	:	3.5	‡	CONTROL LEVER, ID)LE S	STOP	
Rated speed rpm	:	1100	‡	Rated speed rpm Del. quantity	:	325	
Aneroid pressure	•	1500	+	cm3/1000 strokes Tolerance	:	1.5	
Del. quantity cm3/1000 strokes		79.0	1	cm3/1000 strokes Check tolerance	:	1.5	
Tolerance		2.5	Ŧ	cm3/1000s. Spread	:	1.5	
cm3/1000 strokes			Ŧ	cm3/1000 strokes	:	5.0	
Rated speed rpm Aneroid pressure	:		‡	Shutoff solenoid Volt	:	12	
hPa Del. quantity	:	1500	‡				
cm3/1000 strokes Tolerance	:	86.0	‡	IDLE DELIVERY			
cm3/1000 strokes Check tolerance	:	2.5	‡	Rated speed rpm Del. quantity	:	450	
cm3/1000s.	:	3.5	1	cm3/1000 strokes Tolerance	:	1.5	
Rated speed rpm Aneroid pressure	:	1500	İ	cm3/1000 strokes Check tolerance	:	1.5	
hPa Del. quantity	:	1500	$\frac{1}{1}$	cm3/1000s.	:	1.5	
cm3/1000 strokes	:	91.0	Ŧ				
Tolerance cm3/1000 strokes	:	2.5	Ŧ				
Check tolerance cm3/1000s.	:	3.5	‡				
Rated speed rpm	:	1800	‡	START TRANSITION			
Aneroid pressure hPa	:	1500	‡	Rated speed rpm Del. quantity		450	
Del. quantity cm3/1000 strokes	:	89.0	‡	cm3/1000 strokes Tolerance	:	40.0	
Tolerance cm3/1000 strokes		0.5	<u> </u>	cm3/1000 strokes	:	15.0	
Check tolerance cm3/1000s.	:	3.0	1	Rated speed rpm	:	275	
CHID/ TOOOS.	•	٥.0	т	nated speed (pill	•	L , J	

Del. quantity

cm3/1000 strokes : 75.0

Tolerance

cm3/1000 strokes : 25.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm 7,5

Dimension KF mm : KOT

MS1 dimension mm : 1,72

Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION

SET

Control lever

: 37,2..39,2 position YA mm

Control lever

position YB mm : 55,1..62,9

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.07.95 Test oil : ISO 4113

Part no. : 0 460 485 032 Pump designation : VE5/8F2100L545-6

Customer-spec. information
Customer : VW
Motor : 2,4l SD
Power KW : 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.4
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm :

Rated speed rpm : 1250

Setting hPa : 6.0 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1250

540

Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm

Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 25.0

Shutoff solenoid Volt	:	12	‡	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
			Ī	Rated speed rpm Supply pomp	:	1790
LOAD-DEPENDENT ST SETTING	TART	OF DELIVERY	Ŧ	pressure bar Tolerance hPa	:	7.5 0.3
DELIVERY DIFFEREN	VCE		Ŧ	Shutoff solenoid Volt	:	12
Rated speed rpm Del. quantity	:	1500	Ī	Rated speed rpm Supply pomp	:	1000
cm3/1000 strokes Tolerance	•	-7.0	+	pressure bar Tolerance hPa	:	5.3 0.3
cm3/1000 strokes Shutoff solenoid	•	1.0	‡	Shutoff solenoid Volt	:	12
Volt	:	12	‡	OVERFLOW QUANTITY		
PRESSURE DIFFEREN	ICE		1	Rated speed rpm	:	2100
Rated speed rpm Del. quantity	:	1500	‡	Overflow quantity ccm/10s		97.2
cm3/1000 strokes Tolerance	:	-0.2	‡	Tolerance ccm/10s	:	41.6
cm3/1000 strokes Shutoff solenoid	:	0.1	‡	Check tolerance		
Volt	:	12	‡	ccm/10s Shutoff solenoid	:	55.5
TIMING-DEVICE TRA	VEL	DIFFERENCE	‡	Volt	:	12
Rated speed rpm Del. quantity	:	1500	1	Rated speed rpm Overflow quantity	:	600
cm3/1000 strokes Tolerance	:	-0.4	+	ccm/10s Tolerance	:	63.8
cm3/1000 strokes Shutoff solenoid	:	0.1	+	ccm/10s	:	22.2
Volt	:	12	+	Check tolerance ccm/10s	:	34.7
INJECTION-PUMP TE	ST S	SPECIFICATIONS	‡	Shutoff solenoid Volt	:	12
TIMING DEVICE CHA	RACT	TERISTIC	Ī	DELIVERY AND BREA	KAWA	Y CHARACTERISTIC
Rated speed rpm	:	1790	Ī	Rated speed rpm Del. quantity	:	2400
SV travel mm Tolerance mm	:	5.7 0.4	1	cm3/1000 strokes Tolerance	:	12.0
Check tolerance mm	•	0.7	<u>†</u>	cm3/1000 strokes Check tolerance	:	2.0
Shutoff solenoid		12	+	cm3/1000S. Shutoff solenoid	:	4.0
Volt	:		Ŧ	Volt	:	12
Rated speed rpm		1000	‡	Rated speed rpm	:	2300
SV travel mm Tolerance mm	:	0.7 0.4	Ŧ	Del. quantity cm3/1000 strokes	:	22.0
Check tolerance mm	:	0.7	‡	Tolerance cm3/1000 strokes	:	5.0
Shutoff solenoid Volt	:	12	Ţ	Check tolerance cm3/1000S.	:	6.0

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Shutoff solenoid		-	Rated speed rpm	:	415
Volt	:	12 -	Del. quantity		. , , ,
		· -	cm3/1000 strokes	:	1.5
Rated speed rpm	: 260	nn -	Tolerance	•	1.05
Del. quantity	. 200		cm3/1000 strokes		1.5
cm3/1000 strokes		3.0	Spread	•	1.7
	•	5.0		_	5.0
Tolerance		7.0	cm3/1000 strokes	:	5.0
cm3/1000 strokes	:	3.0	Check tolerance		4 =
Check tolerance			cm3/1000s.	:	1.5
cm3/1000s.	:	3.0	Spread		
Shutoff solenoid		-	cm3/1000 strokes	:	5.0
Volt	:	12 -	}		
		-	+		
Rated speed rpm	: 210	90 -	}		
el. quantity		-			
m3/1000 strokes	• 3	1.0	RESIDUAL QUANTIT	Υ	
Tolerance	•	-	LEGISONE GONITY I	•	
m3/1000 strokes	•	1.0	Rated speed rpm	:	490
heck tolerance	·	1.0	Del. quantity	•	470
		3 3		_	7.0
m3/1000s.	•	2.2	cm3/1000 strokes	:	7.8
hutoff solenoid		40	Tolerance		4.5
olt	•	12 -	cm3/1000 strokes	:	1.0
		_	- Check tolerance		
ated speed rpm	: 60	00 -	cm3/1000s.	:	2.5
el. quantity		.	Shutoff solenoid		
m3/1000 strokes	; 3	3.8	Volt	:	12
olerance		_		-	· -
m3/1000 strokes	:	1.5			
heck tolerance	•				
m3/1000s.		3.0	CHECKING 1 040-05	DEVIDE	ENIT
	i	3.0	- CHECKING LOAD-DEF		ZIA I
hutoff solenoid		40	START OF DELIVERY	T	
olt	:	12 -			
		_ +	- DELIVERY DIFFEREN	VCE	
ated speed rpm	: 125	0 -	-		
el. quantity		-	- Rated speed rpm	:	1500
m3/1000 strokes	: 3	6.5	Del. quantity		
olerance		4	- cm3/1000 strokes	*	-6.5
m3/1000 strokes	•	0.5	Tolerance	•	= = =
heck tolerance	•		- cm3/1000 strokes	•	3.0
m3/1000s.		2.2	- Check tolerance	•	J.0
	•		- cm3/1000s.		4.0
hutoff solenoid	•	12		:	4.0
olt	•	12	- Shutoff solenoid		40
		1	- Volt	•	12
		i	-		
			 TIMING—DEVICE TRA 	AVEL	DIFFERENCE
LECTR. SHUTOFF		-1	-		
ONTROL LEVER, ID	LE STOP	4	 Rated speed rpm 	:	1500
•		4	- Del. quantity		
ated speed rpm	: 41	5 - 1	- cm3/1000 strokes	:	-0.4
el. quantity	, ,,,,		- Tolerance	•	
m3/1000 strokes		1.5	- cm3/1000 strokes		0.1
	•	1		•	0.1
olerance		1 = 1	- Check tolerance		0.4
m3/1000 strokes	•	1.5	- cm3/1000s.	:	0.1
heck tolerance		<u> </u>	- Shutoff solenoid		4.5
	•	1.5	- Volt	:	12
m3/1000s.	•				
m3/1000s. oread		+	-		
n3/1000s. pread		5.0	- - DELIVERY DIFFEREN	VCE	
n3/1000s.		5.0	- DELIVERY DIFFEREN	VCE	
n3/1000s. oread	: 5	+	- - DELIVERY DIFFEREN - Rated speed rpm		1500

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 strokes : 1.5

Check tolerance

cm3/1000s. 1.5

Shutoff solenoid

12 Volt

PRESSURE DIFFERENCE

Rated speed rpm 1500

Supply pomp

pressure bar -1.0Tolerance hPa 0.2 :

Shutoff solenoid

Volt 12

TIMING-DEVICE TRAVEL DIFFERENCE

1500 Rated speed rpm :

0.2 Tolerance mm

Check

tolerance mm 0.6 •

Shutoff solenoid

Volt 12

START TRANSITION

Rated speed rpm : 380

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

12 Volt

Rated speed rpm 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 : +-0,1 Tolerance mm

: 5,8 Dimension KF mm

: +-0,2 Tolerance mm

: 1,4 Dimension MS mm

Tolerance mm : +-0,2 CONTROL LEVER POSITION

SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.09.95 : ISO 4113 Test oil

Part no. : 0 460 485 034 Pump designation : VE5/8F2100L545-7

Customer-spec. information Customer : VW Motor : 2,41 SD Power KW 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar Tolerance bar 3

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 840 :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm 2.4 : Tolerance mm 0.2 : Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1250 :

Setting hPa 6.0 Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 36.5 Tolerance 0.5 cm3/1000 strokes : Spread cm3/1000 strokes : 2.0

Shutoff solenoid 12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

540 Rated speed rpm Del. quantity

cm3/1000 strokes : 7.0

Tolerance cm3/1000 strokes :

0.5 Shutoff salenoid

Volt

12

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity cm3/1000 strokes :

60.0

Tolerance

cm3/1000 strokes :

25.0

Shutoff solenoid Volt	:	12	‡	SUPPLY PUMP PRESS	URE	CHARACTERISTIC	
			‡	Rated speed rpm Supply pomp	:	1790	
LOAD-DEPENDENT ST	ART	OF DELIVERY	i	pressure bar		7.5	
SETTING	AIV I	OI DELIVERI	T	Tolerance hPa	•	0.3	
SELLTING			T		•	0.3	
			+	Shutoff solenoid		4.0	
DELIVERY DIFFEREN	ICE		†	Volt	:	12	
			+				
Rated speed rpm	:	1500	+	Rated speed rpm	:	1000	
Del. quantity			+	Supply pomp			
cm3/1000 strokes	:	-7.0	1	pressure bar	:	5.3	
Tolerance	•		1	Tolerance hPa		0.3	
cm3/1000 strokes		1.0	1	Shutoff solenoid	•	0.9	
	•	1.0	T			12	
Shutoff solenoid		42	T	Volt	•	12	
Volt	•	12	+				
			+	OVERFLOW QUANTITY			
PRESSURE DIFFEREN	ICE		+				
			+	Rated speed rpm	:	2100	
Rated speed rpm	:	1500	1	Overflow quantity			
Del. quantity	•		1	ccm/10s	•	97.2	
cm3/1000 strokes		-0.2	1	Tolerance	•	7112	
Tolerance	•	0.2	T	ccm/10s		41.6	
		0.4	T	CCm/ TOS	•	41.0	
cm3/1000 strokes	:	0.1	+				
Shutoff solenoid			+	Check tolerance			
Volt		12	+	ccm/10s	•	55.5	
			+	Shutoff solenoid			
TIMING-DEVICE TRA	VEL	DIFFERENCE	+	Volt	:	12	
			1				
Rated speed rpm	:	1500	1	Rated speed rpm	:	600	
Del. quantity	•	1500	I	Overflow quantity	-	000	
		0. /	T	ccm/10s		63.8	
cm3/1000 strokes	:	-0.4	Ť		•	03.0	
Tolerance			†	Tolerance			
cm3/1000 strokes	:	0.1	+	ccm/10s	:	22.2	
Shutoff solenoid			+				
Volt	:	12	+	Check tolerance			
			+	ccm/10s	:	34.7	
			- 1	Shutoff solenoid			
INJECTION-PUMP TE	ST S	SPECIFICATIONS	1	Volt	:	12	
2	• •		1		•		
TIMING DEVICE CHA	PACT	FRISTIC	1	DELIVERY AND BREAK	CAWA	Y CHARACTERISTIC	
12.12.10	117101		1		~ 1 1 1 1		
Rated speed rpm	:	1790	1	Rated speed rpm	:	2400	
Rated speed (pil	•	1770	T	Del. quantity	•	2-00	
01/ 4		E 7	T			12.0	
SV travel mm	:	5.7	†	cm3/1000 strokes	:	12.0	
Tolerance mm	:	0.4	†	Tolerance			
Check			+	cm3/1000 strokes	:	2.0	
tolerance mm	:	0.7	+	Check tolerance			
Shutoff solenoid			+	cm3/1000s.	:	4.0	
Volt	:	12	1	Shutoff solenoid			
	-	_	1	Volt	:	12	
Rated speed rpm	:	1000	1		•	· -	
nated speed ipil	•	, 555	1	Rated speed rpm	:	2300	
CM Americal are		0.7	T		•	2300	
SV travel mm	:	0.7	†	Del. quantity	_	22.0	
Tolerance mm	:	0.4	†	cm3/1000 strokes	:	22.0	
Check			+	Tolerance			
tolerance mm	:	0.7	+	cm3/1000 strokes	:	5.0	
Shutoff solenoid			+	Check tolerance			
Volt	:	12	+	cm3/1000s.	:	6.0	
			*				

Shutoff solenoid			+ Rated speed rpm : 415
Volt	:	12	+ Del. quantity
		_	+ cm3/1000 strokes : 1.5
Rated speed rpm	:	2600	+ Tolerance
Del. quantity			+ cm3/1000 strokes : 1.5
cm3/1000 strokes	:	3.0	Spread
Tolerance	•		+ cm3/1000 strokes : 5.0
cm3/1000 strokes	•	3.0	- Check tolerance
Check tolerance	•	• • • • • • • • • • • • • • • • • • • •	+ cm3/1000s. : 1.5
cm3/1000s.	•	3.0	Spread
Shutoff solenoid	•	5.0	cm3/1000 strokes : 5.0
Volt	:	12	T Chist root strokes . 5.0
VOCE	•	12	I
Rated speed rpm	:	2100	I
Del. quantity	•	2100	
cm3/1000 strokes		31.0	RESIDUAL QUANTITY
Tolerance	•	51.0	T KESTDONE GONNITTI
cm3/1000 strokes	•	1.0	Rated speed rpm : 490
	·	1.0	
Check tolerance	_	2 2	+ Del. quantity
cm3/1000s.	:	2.2	+ cm3/1000 strokes : 7.8
Shutoff solenoid		4.5	+ Tolerance
Volt	:	12	+ cm3/1000 strokes : 1.0
		400	+ Check tolerance
Rated speed rpm	:	600	+ cm3/1000s. : 2.5
Del. quantity			+ Shutoff solenoid
cm3/1000 strokes	:	33.8	† Volt : 12
Tolerance			+
cm3/1000 strokes	:	1.5	+
Check tolerance			
cm3/1000S.	:	3.0	+ CHECKING LOAD-DEPENDENT
Shutoff solenoid			+ START OF DELIVERY
Volt	:	12	+
			+ DELIVERY DIFFERENCE
Rated speed rpm	:	1250	+
Del. quantity			Rated speed rpm : 1500
cm3/1000 strokes	:	36.5	+ Del. quantity
Tolerance		. • -	- cm3/1000 strokes : -6.5
cm3/1000 strokes	:	0.5	Tolerance
Check tolerance	•		+ cm3/1000 strokes : 3.0
cm3/1000s.	•	2.2	Check tolerance
Shutoff solenoid	•		- cm3/1000s. : 4.0
Volt	•	12	Shutoff solenoid
VO. 1	•	16	Volt : 12
			I voct
			TIMING-DEVICE TRAVEL DIFFERENCE
ELECTR. SHUTOFF			I LITTING PEATOR LUMBER DIFFERENCE
CONTROL LEVER, ID	IE e	TOP	Rated speed rpm : 1500
CONTROL LEVER, ID	בכ ט	₹ U F	
Dahad cunsal		/.1E	Del. quantity
Rated speed rpm	:	415	+ cm3/1000 strokes : -0.4
Del. quantity cm3/1000 strokes		4 -	Tolerance
CM4/JINIE CTPAVAC	:	1.5	- cm3/1000 strokes : 0.1
		A **	+ Check tolerance
Tolerance			+ cm3/1000s. : 0.1
Tolerance cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes Check tolerance	:		+ Shutoff solenoid
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5	+ Shutoff solenoid + Volt : 12
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	:	1.5	+ Volt : 12
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	:		
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes	:	1.5 5.0	Volt : 12 DELIVERY DIFFERENCE
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread	:	1.5 5.0	+ Volt : 12

Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000s. : 1.5
Shutoff solenoid

12

PRESSURE DIFFERENCE

Volt

Rated speed rpm : 1500
Supply pomp
pressure bar : -1.0
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.2
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 strokes : 10.0

Shutoff salenoid Volt : 12

Rated speed rpm : 180
Del. quantity
cm3/1000 strokes : 60.0
Tolerance

cm3/1000 strokes : 25.0 Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2
Dimension MS mm : 1,4
Tolerance mm : +-0,2

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.02.96 Test oil : ISO 4113

Part no. : 0 460 404 078 Pump designation : VE4/10F2100L553

Customer-spec. information

Customer : VM

Motor : 425 CLIRZ/CLIRX

TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 500

Aneroid pressure

hPa : 1000

Setting mm : 7.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 500

Aneroid pressure

hPa : 1000

Setting hPa : 5.9 Tolerance hPa : 0.3 Shutoff solenoid

Volt :

FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

3.0

Rated speed rpm : 1500 Aneroid pressure

hPa : 1000 Del. quantity

cm3/1000 strokes : 68.0 Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s.

Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 44.5

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid Volt :

Volt : 12 Check tolerance

cm3/1000s. : 3.0

IDLE SETTING

Rated speed rpm : 450

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 3.0

FULL-LOAD SPEED F	EGULATION	J	+ Shutoff solenoid + Volt	:	12	
Rated speed rpm Pressure hPa	: 2300 : 10))00	Timing device			
Del. quantity cm3/1000 strokes		2.0	solenoid Volt	:	100	
Tolerance cm3/1000 strokes		3.0	Rated speed rpm Aneroid pressure	:	1000	
Shutoff solenoid	•	12	hPa	:	1000	
Volt	•	12	T SV toward and	_	0.0	
			+ SV travel mm	:	9.0	
STARTING FUEL DEL	IVERY		+ Tolerance mm + Check	:	0.5	
Rated speed rpm	: 100)	+ tolerance mm	:	0.7	
Del. quantity cm3/1000 strokes	: 65	5.0	+ Shutoff solenoid + Volt	:	12	
Tolerance			+			
cm3/1000 strokes	: 17	'.0	+ Rated speed rpm	:	1000	
Shutoff solenoid		10	+ Aneroid pressure		4000	
Volt	:	12	† hPa	:	1000	
			+ SV travel mm	:	0.3	
			+ Tolerance mm	:	0.3	
			Check	•	3. 0	
			+ tolerance mm	:	0.3	
INJECTION-PUMP TE	ST SPECIE	PATTONS	+ Shutoff solenoid	•	0.0	
11102011011 1011 12	01 0/ 2011	10/11/01/0	+ Volt	:	12	
TIMING DEVICE CHA	RACTERIST	IC	+	•		
			+ Timing device			
Rated speed rpm	: 2100		+ solenoid Volt	:	100	
Aneroid pressure			+			
hPa	: 10	00	SUPPLY PUMP PRESS	URE	CHARACTERIS	TIC
CV travel mm		.8	T Rated speed rpm		2100	
SV travel mm		.5		:	2100	
Tolerance mm	: 0	• 5	+ Aneroid pressure		4000	
Check		7	+ hPa	:	1000	
tolerance mm	: 0	.7	+ Supply pomp		0.0	
Shutoff solenoid		40	+ pressure bar		8.0	
Volt	:	12	+ Tolerance hPa	:	0.3	
De head an early man	. 450		+ Shutoff solenoid		40	
Rated speed rpm Aneroid pressure	: 150		+ Volt	:	12	
hPa	: 10	00	+ Rated speed rpm	:	150	
-			+ Aneroid pressure			
SV travel mm	: 5	.5	+ hPa	:	1000	
Tolerance mm		.8	+ Supply pomp	-		
Check			+ pressure bar	:	4.8	
tolerance mm	: 1	.8	+ Tolerance hPa	•	0.8	
Shutoff solenoid			+ Shutoff solenoid		-	
Volt	•	12	+ Volt	:	12	
			+			
Rated speed rpm	0400		+ Rated speed rpm	:	1000	
	: 2100		+ Aneroid pressure			
Aneroid pressure						
Aneroid pressure hPa		00	+ hPa	:	1000	
	: 10		+ hPa + Supply pomp	:		
	: 10 : 0	.5	hPa Supply pomp pressure bar	•	6.5	
hPa	: 10 : 0		hPa Supply pomp pressure bar Tolerance hPa	:		
hPa SV travel mm	: 10 : 0	.5	hPa Supply pomp pressure bar	:	6.5 0.3	
hPa SV travel mm Tolerance mm	: 10 : 0	.5	hPa Supply pomp pressure bar Tolerance hPa	•	6.5	

		l Charle talan			
OVERFLOW QUANTITY	(+ Check tolera - cm3/1000s.	:	2.5	
Rated speed rpm Aneroid pressure	: 2100	+ Shutoff sole + Volt	enota :	12	
hPa Overflow quantity	: 1000	Rated speed Aneroid pres		2100	
ccm/10s Tolerance	: 111.1	hPa Del. quantit	•	1000	
ccm/10s	; 55.5	cm3/1000 str		63.5	
Check tolerance ccm/10s	: 55.5	cm3/1000 str		1.5	
Shutoff solenoid Volt	: 12	cm3/1000s.	:	3.0	
	KAWAY CHARACTERISTIC	Volt	:	12	
Rated speed rpm	: 2300	Rated speed Aneroid pres		700	
Aneroid pressure	: 1000	+ hPa + Del. quantit	:	1000	
Del. quantity cm3/1000 strokes		cm3/1000 str		71.0	
Tolerance	: 3.0	cm3/1000 str		1.5	
Check tolerance cm3/1000s.	: 4.0	cm3/1000s. Shutoff sole	:	3.0	
Shutoff solenoid Volt	: 12	Volt		12	
Rated speed rpm	: 2450	Rated speed Aneroid pres		1500	
Aneroid pressure hPa	: 1000	hPa Del. quantit	; :y	1000	
Del. quantity cm3/1000 strokes	: 7.0	cm3/1000 str		68.0	
Check tolerance cm3/1000s.	: 5.0	cm3/1000 str		0.5	
Shutoff solenoid Volt	: 12	cm3/1000s. Shutoff sole	: enoid	2.0	
Rated speed rpm	: 2650	+ Volt	•	12	
Aneroid pressure hPa	: 1000	‡			
Del. quantity cm3/1000 strokes	: 1.5	+ ELECTR. SHUT + CONTROL LEVE		STOP	
Tolerance cm3/1000 strokes	: 1.5	Rated speed		450	
Check tolerance cm3/1000s.	: 1.5	Del. quantit		1.5	
Shutoff solenoid Volt	: 12	+ Tolerance + cm3/1000 str + Check tolera		1.5	
Rated speed rpm Aneroid pressure	: 700	t cm3/1000s.	irice :	1.5	
hPa Del. quantity	: 500	IDLE DELIVER	·Υ		
cm3/1000 strokes Tolerance	: 58.5	Rated speed		900	
cm3/1000 strokes	: 0.5	Del. quantit cm3/1000 str	У	4.0	

Tolerance		
cm3/1000 strokes	:	2.5
Check tolerance		
cm3/1000s.	:	4.0
Shutoff solenoid		4.5
Volt	:	12
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	5.0
Tolerance		
cm3/1000 strokes	:	2.5
Check tolerance		
cm3/1000s.	:	5.0
Shutoff solenoid		
Volt	:	12

EXHAUST-GAS RECIRCULATION

Rated speed rpm	:	1000
Aneroid pressure hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	50.0
Tolerance		
cm3/1000 strokes	:	1.0
Check tolerance		
cm3/1000s.	:	2.5
Shutoff solenoid		
Volt	:	12

START TRANSITION

Rated speed rpm Del. quantity	:	550
cm3/1000 strokes	:	40.0
Tolerance cm3/1000 strokes	:	10.0
Shutoff solenoid Volt	:	12

Rated speed rpm	:	400
Del. quantity cm3/1000 strokes	:	65.0
Tolerance		47.0

cm3/1000 strokes : 17.0 Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +0,1 Dimension KF mm : 5,4
Tolerance mm : +-0,2
Dimension MS mm : 0,8
Tolerance mm : +-0,2

POTENTIOMETER

SET

1. measurement

voltage Volt : 5,0
1. measurement

voltage Volt : 2,31

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 29,5..31,5

Control lever

position YB mm : 47,0..57,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.04.95 Test oil : ISO 4113

Part no. : 0 460 414 114 Pump designation : VE4/11F1250L613

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8045.25.210
Power KW : 63.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45
Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800

Setting mm : 2.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800

Setting hPa : 6.0 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 67.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm 325 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt Spread cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1325
Del. quantity
cm3/1000 strokes : 45.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 90.0

Tolerance		+	- Rated speed rpm	:	400	
cm3/1000 strokes	: 25	.0 -	 Overflow quantity 	/		
Shutoff solenoid		+	- ccm/10s	:	63.8	
Volt	:	12 🗼	- Tolerance			
		+	- ccm/10s	:	22.2	
		+	-			
		+	 Check tolerance 			
		+	- ccm/10s	:	22.2	
		+	Shutoff solenoid			
INJECTION-PUMP TE	ST SPECIF	ICATIONS +	· Volt	:	12	
TTMTNO DELITOR OU	DAGTECTOT	†	. AEI THENY AND DOC			
TIMING DEVICE CHA	IRACTERIST.	10	- DELIVERY AND BREA	AKAWA	AY CHARACIERI	SIIC
Pated speed nom	: 1150	†	Bated speed nom	:	1325	
Rated speed rpm	: 1150	T	 Rated speed rpm Del. quantity 	•	1323	
SV travel mm	. 6	.4	cm3/1000 strokes		45.0	
Tolerance mm		1.4	Tolerance	•	45.0	
Check		1	cm3/1000 strokes	:	2.0	
tolerance mm	: 0	.7	Check tolerance	•	2.0	
Shutoff solenoid		1	cm3/1000s.		6.0	
Volt	•	12	Shutoff solenoid	•	0.0	
	•	1	Volt	:	12	
Rated speed rpm	: 700	1				
, , , , , , , , , , , , , , , , , , , ,		1	Rated speed rpm	:	1300	
SV travel mm	: 1.	.8 +	Del. quantity			
Tolerance mm	: 0.	.4	cm3/1000 strokes	:	55.0	
Check		+	Tolerance			
tolerance mm	: 0.	.7 +	cm3/1000 strokes	•	6.0	
Shutoff solenoid		+	Shutoff solenoid			
Volt	: 1	12 +	Volt	:	12	
		+			4400	
SUPPLY PUMP PRESS	URE CHARAC	TERISTIC +	Rated speed rpm	:	1420	
Batast assess to see	4050	Ť	Del. quantity		4 5	
Rated speed rpm	: 1250	†	cm3/1000 strokes	:	1.5	
Supply pomp pressure bar	: 8.	2 T	Tolerance cm3/1000 strokes	:	1.5	
Tolerance hPa	: 0.		Check tolerance	•	1.5	
Shutoff solenoid		I	cm3/1000s.		1.5	
Volt	. 1	12	Shutoff solenoid	•	1.2	
1011	•	_	Volt	:	12	
Rated speed rpm	: 400	1		•	, -	
Supply pomp		+	Aneroid pressure			
pressure bar	: 4.	0 +	hPa	•		
Tolerance hPa	: 0.	3				
Shutoff solenoid		+	LDA/			
Volt	: 1	5	HBA stroke mm	:	6,2	
		+			44.55	
OVERFLOW QUANTITY		+	Rated speed rpm	:	1250	
	4050	+	Del. quantity		50.5	
	: 1250	+	cm3/1000 strokes	:	59.5	
Overflow quantity			Tolerance		4.5	
ccm/10s	: 97.	'	cm3/1000 strokes	:	1.5	
Tolerance ccm/10s	: 41.	<u> </u>	Check tolerance cm3/1000s.		3.5	
CUII/ IUS	: 41.	Ĭ	Shutoff solenoid	:	٥.٦	
Check tolerance		I	Volt	:	12	
ccm/10s	: 41.	6 I	VOCC	•	i 4	
Shutoff solenoid	• न।•	Ţ	Rated speed rpm	:	400	
Volt	: 1	2	Del. quantity	•	. = -	
	•	1	cm3/1000 strokes	:	69.0	
		•				

Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : : :	1.5 3.5 12 800 67.5 0.5 3.0	
ELECTR. SHUTOFF			
CONTROL LEVER, ID	LE S	STOP	
Rated speed rpm	:	325	
Del. quantity			
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 strokes	:	1.5	
Check tolerance cm3/1000s.	:	1.5	
Spread	•	1.5	
cm3/1000 strokes	:	5.0	
FULL-LOAD STOP CO	NTRO	L LEVER	
Rated speed rpm Del. quantity	:	325	
cm3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes		1.5	
Spread	•	1.0	
cm3/1000 strokes	:	5.0	
Check tolerance cm3/1000s.	:	1.5	
Spread		F 0	
cm3/1000 strokes	:	5.0	
IDLE DELIVERY			
Rated speed rpm	:	400	
Del. quantity		1 5	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 strokes	:	1.5	
Check tolerance cm3/1000s.	:	1.5	
Shutoff solenoid			
Volt	:	12	

START TRANSITION

Volt

Rated speed rpm	:	250
Del. quantity cm3/1000 strokes	:	65.0
Tolerance cm3/1000 strokes	:	15.0
Shutoff solenoid Volt	:	12
Rated speed rpm	:	150
Del. quantity cm3/1000 strokes	:	100.0
Tolerance cm3/1000 strokes	:	25.0
Shutoff solenoid		40

ASSEMBLY AND ADJUSTMENT DIMENSIONS

12

LDA/		
HBA stroke mm	: 6,2	
Dimension K mm	: 3,3	
Tolerance mm	: +-0,1	
Dimension KF mm	: 5,5	
Tolerance mm	: +-0,2	
Dimension MS mm	: 0,8	
Tolerance mm	: +-0,2	

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 06.09.95 Test oil : ISO 4113

Part no. : 0 460 485 024 Pump designation : VE5/8F2100L632

Customer-spec. information

: VW Customer

Motor : 2.41 WK SD 57.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar 3 Tolerance bar

: 1 680 750 000 Test Lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1250

Setting mm 2.4 Tolerance mm 0.2 Shutoff solenoid

Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Setting hPa 6.0 Tolerance hPa 0.3 : Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt 12

IDLE SETTING

415 Rated speed rpm

Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes 1.0

Shutoff solenoid

12 Volt

Spread

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s.3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm 2400

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes 2.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 60.0

Tolerance cm3/1000 strokes	:	25.0	‡	SUPPLY PUMP PRESS	URF	CHARACTERT	STIC
Shutoff solenoid Volt	•	12	1	Rated speed rpm		1790	0,20
7011	•		+	Supply pomp	•		
			Ī	pressure bar Tolerance hPa	:	7.5 0.3	
LOAD-DEPENDENT ST	ART	OF DELIVERY	+	Shutoff solenoid	•		
SETTING			‡	Volt	:	12	
DELIVERY DIFFEREN	ICE		1	Rated speed rpm Supply pomp	:	1000	
Rated speed rpm	:	1500	+	pressure bar	:	5.3	
Del. quantity cm3/1000 strokes		-7.0	1	Tolerance hPa Shutoff solenoid	:	0.3	
Tolerance			+	Volt	:	12	
cm3/1000 strokes	:	1.0	+	OVEREL OU OUANTITY			
Shutoff solenoid Volt	:	12	I	OVERFLOW QUANTITY			
	•		+	Rated speed rpm	:	2100	
PRESSURE DIFFEREN	ICE		†	Overflow quantity ccm/10s		97.2	
Rated speed rpm	:	1500	Į	Tolerance	•	91.2	
Del. quantity		• •	+	ccm/10s	:	41.6	
cm3/1000 strokes Tolerance	:	-0.2	1	Check tolerance			
cm3/1000 strokes	:	0.1	Į	ccm/10s	:	55.5	
Shutoff solenoid		40	+	Shutoff solenoid		40	
Volt	:	12	<u> </u>	Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	+	Rated speed rpm		600	
Rated speed rpm	:	1500	1	Overflow quantity ccm/10s		63.8	
Del. quantity	•	1500	Į	Tolerance	•	05.0	
cm3/1000 strokes	:	-0.4	+	ccm/10s	:	22.2	
Tolerance cm3/1000 strokes		0.1	1	Check tolerance			
Shutoff solenoid	•		1	ccm/10s	:	34.7	
Volt	:	12	†	Shutoff solenoid		12	
				Volt	•	12	
INJECTION-PUMP TE	ST S	SPECIFICATIONS	‡	DELIVERY AND BREAK	KAWA'	Y CHARACTE	RISTIC
TIMING DEVICE CHA	RACT	TERISTIC	1	Rated speed rpm Del. quantity	:	2400	
Rated speed rpm	:	1790	+	cm3/1000 strokes	:	12.0	
Tolerance mm	:	0.4	†	Tolerance		2.0	
Check tolerance mm	:	0.7	I	cm3/1000 strokes Check tolerance	•	2.0	
Shutoff solenoid	•		+	cm3/1000s.	:	4.0	
Volt	:	12	†	Shutoff solenoid Volt		12	
Rated speed rpm	:	1000	Į	VOLL	•	12	
·			+	Rated speed rpm	:	2300	
SV travel mm Tolerance mm	:	1.1 0.4	<u> </u>	Del. quantity cm3/1000 strokes	:	22.0	
Check	•	0.7	Į	Tolerance	•		
tolerance mm	:	0.7	+	cm3/1000 strokes	:	5.0	
Shutoff solenoid Volt	:	12	‡	Check tolerance cm3/1000s.	:	6.0	
	,	· -	ı	· ==++			

Shutoff solenoid	:	12		ed speed rpm . quantity	:	415
	•		+ c m 3.	/1000 strokes	:	1.5
Rated speed rpm Del. quantity cm3/1000 strokes		2600 3.0	+ cm3.	erance /1000 strokes ead	:	1.5
Tolerance			+ c m 3.	/1000 strokes	:	5.0
cm3/1000 strokes Check tolerance	:	3.0		ck tolerance /1000s.	:	1.5
cm3/1000s. Shutoff solenoid	:	3.0	+ Spr			5.0
Volt	:	12	T cms.	7 1000 Strokes	•	J.0
Rated speed rpm Del. quantity	:	2100	Ŧ			
cm3/1000 strokes Tolerance	:	31.0	+			
cm3/1000 strokes Check tolerance	:	1.0	i i	CKING LOAD-DEP RT OF DELIVERY		ENT
cm3/1000s. Shutoff solenoid	:	2.2	+ DEL	IVERY DIFFEREN	۲F	
Volt	:	12	+			4500
Rated speed rpm	:	600	+ Det.	ed speed rpm . quantity		
Del. quantity cm3/1000 strokes	:	33.8	+ Tole	/1000 strokes erance		
Tolerance cm3/1000 strokes	:	1.5		/1000 strokes ck tolerance	:	3.0
Check tolerance cm3/1000s.	•	3.0	+ cm3/	/1000s. toff solenoid	:	4.0
Shutoff solenoid	•		+ Volt		:	12
Volt	:	12	† TIM	ING-DEVICE TRA	VEL	DIFFERENCE
Rated speed rpm Del. quantity	:	1250	+ Rate	ed speed rpm		1500
cm3/1000 strokes	:	36.5	+ Del.	. quantity		
Tolerance cm3/1000 strokes	:	0.5	+ Tole	/1000 strokes erance		
Check tolerance cm3/1000s.	:	2.2	,	/1000 strokes ck tolerance		0.1
Shutoff solenoid Volt		12	+ cm3/	1000s.	:	0.1
VOCC	•	12	+ Volt		:	12
			DELI	VERY DIFFEREN	CE	
ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	TOP		ed speed rpm	:	1500
Rated speed rpm	:	415	+ cm3/	quantity 1000 strokes	:	1.5
Del. quantity cm3/1000 strokes	:	1.5		erance 1000 strokes	:	1.5
Tolerance cm3/1000 strokes	•	1.5		ck tolerance 1000s.	•	1.5
Check tolerance	•	1.5	+ Shut	off solenoid	•	12
cm3/1000s. Spread	÷		+ Volt		•	12
cm3/1000 strokes	:	5.0	+ PRES	SSURE DIFFERENCE	E	
FULL-LOAD STOP CO	NTROL	LEVER	+ Rate	ed speed rpm	:	1500

Supply pomp

pressure bar : -1.0 Tolerance hPa : 0.2

Shutoff solenoid

Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm : 0.2

Check

tolerance mm : 0.6

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2
Dimension MS mm : 1,4
Tolerance mm : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 09.03.95 : ISO 4113 Test oil : 0 460 485 027 Part no. Pump designation : VE5/8F2100L633-1 Customer-spec. information : VW Customer : 2,41 SD f. T4 Motor TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C 45 Tolerance °C Overflow restriction mm : 0.55 Inlet Tolera Test n assemb Openin bar Tolera Test l Outsid x insi x leng REMARK

Inlet press. bar	: 0.35	;	1	Del. quantity	-	
Tolerance bar			+	cm3/1000 strokes	:	8.0
			†	Tolerance cm3/1000 strokes	•	1.0
Test nozzle holde			I	Shutoff solenoid	•	1.0
assembly	: 1 688	901 000	+	Volt	:	12
			+	Spread		2.0
Opening pressure bar	: 147	•	1	cm3/1000 strokes Check tolerance	:	2.0
Tolerance bar	: 147		I	cm3/1000s.	:	3.0
10010100	,		+		•	
	4 (00	750 000	+	### 1 000 ODEED D		
Test lines	: 1 680	750 000	İ	FULL-LOAD SPEED R	EGUL	LATION
Outside diameter	: 6.00	1	1	Rated speed rpm	:	2400
			+	Del. quantity		
x inside diameter			+	cm3/1000 strokes	:	12.0
x length mm	: 840	!	1	Tolerance cm3/1000 strokes		2.0
			- I	Shutoff solenoid	•	2.0
REMARKS			+	Volt	:	12
			†	STARTING FUEL DEL	T.//EC	v
			I	STARTING FUEL DEL	TACL	V I
			- +	Rated speed rpm	:	100
INJECTION PUMP SE	TTING VAL	UES	+	Del. quantity		(0.0
TIMING DEVICE TRAV	/EI		1	cm3/1000 strokes	:	60.0
ITHING DEVICE INA	VCL		Т			
HO1						

Rated speed rpm : 1500

Rated speed rpm : 1500

Rated speed rpm : 1250

Rated speed rpm : 415

4.3

0.2

12

7.4

0.3

12

35.5

0.5

2.0

12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Setting mm

Volt

Volt

Tolerance mm

Setting hPa

Tolerance hPa

Del. quantity

Tolerance

Spread

Volt

cm3/1000 strokes :

cm3/1000 strokes :

cm3/1000 strokes :

Shutoff solenoid

IDLE SETTING

Shutoff solenoid

Shutoff solenoid

SUPPLY PUMP PRESSURE

Tolerance			1				
cm3/1000 strokes	:	25.0	Ţ	SUPPLY PUMP PRES	SURE	CHARACTER:	ISTIC
Shutoff solenoid		10	+	Data dama adama		1700	
Volt	:	12	1	Rated speed rpm Supply pomp	:	1790	
			+	pressure bar	:	8.1	
	- 4		., +	Tolerance hPa	:	0.3	
LOAD-DEPENDENT S' SETTING	AR	T OF DELIVER	Y I	Shutoff solenoid Volt		12	
SELLING			Į	VOCC	•	12	
DELIVERY DIFFERE	VCE		+	Rated speed rpm	:	1100	
Rated speed rpm	:	1500	†	Supply pomp pressure bar		6.2	
Del. quantity	•	1000	I	Tolerance hPa	:	0.3	
cm3/1000 strokes	:	-7.0	+	Shutoff solenoid	•		
Tolerance		4.0	†	Volt	:	12	
cm3/1000 strokes Shutoff solenoid	:	1.0	1	OVERFLOW QUANTIT	Y		
Volt	:	12	1	OVERTEDW GOARTIT	U		
			+	Rated speed rpm		2100	
PRESSURE DIFFEREN	1CE		1	Overflow quantity ccm/10s	y .	97.2	
Rated speed rpm	:	1500	Ţ	Tolerance	•	71.2	
Del. quantity			+	ccm/10s	:	41.6	
cm3/1000 strokes Tolerance	:	-0.2	†	Check tolerance			
cm3/1000 strokes	:	0.1	I	com/10s	:	55.5	
Shutoff solenoid	•		+	Shutoff solenoid			
Volt	:	12	+	Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	Ī	Rated speed rpm	:	600	
			+	Overflow quantity			
Rated speed rpm	:	1500	†	ccm/10s Tolerance	:	63.8	
Del. quantity cm3/1000 strokes	:	-1.2	I	ccm/10s	:	22.2	
Tolerance			+				
cm3/1000 strokes	:	0.1	†	Check tolerance ccm/10s		34.7	
Shutoff solenoid Volt	:	12	1	Shutoff solenoid	•	34.7	
***	Ť		+	Volt	:	12	
INJECTION-PUMP TE		CDECTETCATIO	TAIC	DELIVERY AND BREA	Λ <i>ν</i> Λ1.17	AV CUADACTE	בסזפדזר
TIMECITON-FORE 15	S I	SPECIFICATIO	T	ACCIACK! WAS DUCK		TI CHARACTE	TUTOLIC
TIMING DEVICE CHA	RAC	TERISTIC	+	Rated speed rpm	:	2400	
Rated speed rpm	•	1790	1	Del. quantity cm3/1000 strokes	•	12.0	
Tolerance mm		0.4	+	Tolerance			
Check		0.7	+	cm3/1000 strokes	:	2.0	
tolerance mm Shutoff solenoid	:	0.7	Ī	Check tolerance cm3/1000s.	•	4.0	
Volt	:	12	1	Shutoff solenoid	•		
	_	4466	+	Volt	:	12	
Rated speed rpm	:	1100	1	Rated speed rpm	:	2300	
SV travel mm	:	1.6	+	Del. quantity			
Tolerance mm	:	0.4	+	cm3/1000 strokes	:	22.0	
Check tolerance mm	•	0.7	1	Tolerance cm3/1000 strokes	:	5.0	
Shutoff solenoid	•			Check tolerance	•		
Volt	:	12	+	c m 3/1000s.	:	6.0	

Shutoff solenoid Volt	•	12	ţ			
VOCC	•	, _	Ţ			
Rated speed rpm	:	2600	+	·		······
Del. quantity		7.0	†	CHECKING LOAD-DE		ENT
cm3/1000 strokes Tolerance	:	3.0	1	START OF DELIVER	٢	
cm3/1000 strokes	:	3.0	I	DELIVERY DIFFERE	NCE	
Check tolerance	-		+			
cm3/1000s.	:	3.0	+	Rated speed rpm	:	1500
Shutoff solenoid Volt		12	†	Del. quantity		-10.5
voct	•	12	Ī	cm3/1000 strokes Tolerance	•	-10.5
Rated speed rpm	:	2100	1	cm3/1000 strokes	:	3.0
Del. quantity			+	Check tolerance		
cm3/1000 strokes	;	29.5	+	cm3/1000s.		4.0
Tolerance cm3/1000 strokes		1.0	1	Shutoff solenoid Volt		12
Check tolerance	•	1.0	I	٧٥٤٤	•	16
cm3/1000s.	:	2.2	+	TIMING-DEVICE TRA	AVEL	DIFFERENCE
Shutoff solenoid		<u> </u>	+			4555
Volt	:	12	†	Rated speed rpm	:	1500
Rated speed rpm	•	600	Ī	Del. quantity cm3/1000 strokes	•	-1.2
Del. quantity	•	30 0	1	Tolerance	•	1,4
cm3/1000 strokes	:	33.3	+	cm3/1000 strokes	:	0.1
Tolerance		4 5	+	Check tolerance		0.4
cm3/1000 strokes Check tolerance	:	1.5	†	cm3/1000S. Shutoff solenoid	:	0.1
cm3/1000s.	•	3.0	Ī	Volt	•	12
Shutoff solenoid	•	0.0	1	1000	•	, _
Volt	:	12	+	DELIVERY DIFFEREN	VCE	
Datad are and non-		1250	†	Dated aread no-		1500
Rated speed rpm Del. quantity	:	1250	Ī	Rated speed rpm Del. quantity	;	1500
cm3/1000 strokes	:	35.5	\downarrow	cm3/1000 strokes	:	1.5
Tolerance			+	Tolerance		
cm3/1000 strokes	:	0.5	+	cm3/1000 strokes	:	1.5
Check tolerance		2.2	†	Check tolerance		1.5
cm3/1000s. Shutoff solenoid	•	۷.۷	Ī	cm3/1000S. Shutoff solenoid		ر.،
Volt	:	12	1	Volt	:	12
		_	+			
			†	PRESSURE DIFFEREN	1CE	
ELECTR. SHUTOFF				Rated speed rpm	•	1500
CONTROL LEVER, ID	LE	STOP	I	Supply pomp		
·			+	pressure bar		
Rated speed rpm	:	415	+	Tolerance hPa		0.2
Del. quantity		1 5	†	Shutoff solenoid		12
cm3/1000 strokes Tolerance	:	1.5	İ	Volt	:	14
cm3/1000 strokes	:	1.5	Į	TIMING-DEVICE TRA	IVEL	DIFFERENCE
Check tolerance	-		+			
cm3/1000s.	:	1.5	+	Rated speed rpm		
Spread		F 0	†	Tolerance mm	:	0.2
cm3/1000 strokes	:	5.0	İ	Check tolerance mm	•	0.6
			I	Shutoff solenoid	•	0.0
			+	Volt	:	12
			•			

Rated speed rpm : 180

Del. quantity cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

: 3,3 Dimension K mm Tolerance mm : +-0,1 Dimension KF mm : 5,8 : +-0,2 Tolerance mm Dimension MS mm : 1,4 : +-0,1 Tolerance mm

CONTROL LEVER POSITION SET

Control lever

: 32,8..34,8 position YA mm

Control lever

: 60,5..71,5 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.09.95 Test oil : ISO 4113

Part no. : 0 460 485 028 Pump designation : VE5/8F2100L633-2

Customer—spec. information
Customer : VW
Motor : 2,4l_SD

Power KW : 57.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 000

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 4.3 Tolerance mm : 0.2 Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 7.4
Tolerance hPa : 0.3

Shutoff solenoid

Rated speed rpm

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

:

1250

2400

Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm 415 Del. quantity cm3/1000 strokes : 8.0 Tolerance cm3/1000 strokes 1.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm

Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 60.0

Tolerance cm3/1000 strokes	:	25.0	‡	SUPPLY PUMP PRESS	URE	CHARACTE	RISTIC
Shutoff solenoid Volt	•	12	‡	Rated speed rpm	:	1790	
			‡	Supply pomp pressure bar Tolerance hPa	:	8.1 0.3	
LOAD-DEPENDENT ST SETTING	ART OF	DELIVERY	+	Shutoff solenoid Volt	:	12	
DELIVERY DIFFEREN	CE		‡	Rated speed rpm Supply pomp	:	1100	
Rated speed rpm Del. quantity		500	+	pressure bar Tolerance hPa	:	6.2 0.3	
cm3/1000 strokes Tolerance		-7.0	‡	Shutoff solenoid Volt	:	12	
cm3/1000 strokes Shutoff solenoid Volt	:	1.0 12	‡	OVERFLOW QUANTITY	•		
PRESSURE DIFFEREN	CE	12	Ī	Rated speed rpm Overflow quantity	:	2100	
Rated speed rpm		500	+	ccm/10s Tolerance	:	97.2	
Del. quantity cm3/1000 strokes	:	-0.2	‡	ccm/10s	:	41.6	
Tolerance cm3/1000 strokes Shutoff solenoid	•	0.1	Ī	Check tolerance ccm/10s Shutoff solenoid	:	55.5	
Volt	:	12	‡	Volt	:	12	
TIMING-DEVICE TRA			‡	Rated speed rpm Overflow quantity	:	600	
Rated speed rpm Del. quantity cm3/1000 strokes		500 -1.2	‡	ccm/10s Tolerance ccm/10s	:	63.8 22.2	
Tolerance cm3/1000 strokes		0.1	Ī	Check tolerance	•	22.2	
Shutoff solenoid Volt	:	12	‡	ccm/10s Shutoff solenoid	:	34.7	
			- ‡	Volt	:	12	
INJECTION-PUMP TE	_		‡	DELIVERY AND BREA			ERISTIC
TIMING DEVICE CHAP		18TIC 790	‡	Rated speed rpm Del. quantity cm3/1000 strokes	:	2400 12.0	
Rated speed rpm Tolerance mm Check	:	0.4	Ī	Tolerance cm3/1000 strokes		2.0	
tolerance mm Shutoff solenoid	:	0.7	‡	Check tolerance cm3/1000s.	:	4.0	
Volt	. 4	12	‡	Shutoff solenoid Volt	:	12	
Rated speed rpm SV travel mm	: 1	100 1.6	Ī	Rated speed rpm Del. quantity	:	2300	
Tolerance mm	•	0.4	-	cm3/1000 strokes Tolerance	:	22.0	
tolerance mm Shutoff solenoid	•	0.7	‡	cm3/1000 strokes Check tolerance	:	5.0	
Volt	:	12	+	cm3/1000s.	:	ა. 0	

Shutoff solenoid Volt	:	12	‡	Rated speed rpm Del. quantity		
Rated speed rpm	:	2600	1	cm3/1000 strokes Tolerance	:	1.5
Del. quantity cm3/1000 strokes		3.0	1	cm3/1000 strokes Spread	:	1.5
Tolerance			+	cm3/1000 strokes	:	5.0
cm3/1000 strokes Check tolerance		3.0	‡	Check tolerance cm3/1000s.	:	1.5
cm3/1000s. Shutoff solenoid	:	3.0	<u> </u>	Spread cm3/1000 strokes	•	5.0
Volt	:	12	+	tillor rood ser okes	•	3.0
Rated speed rpm	:	2100	Ŧ			
Del. quantity cm3/1000 strokes	:	30.5	Ŧ			
Tolerance cm3/1000 strokes	:	1.0	‡	CHECKING LOAD-DEF		ENT
Check tolerance cm3/1000s.	:	2,2	‡	START OF DELIVERY	′	
Shutoff solenoid Volt	•	12	1	DELIVERY DIFFEREN	VCE	
	•		Ŧ	Rated speed rpm	:	1500
Rated speed rpm Del. quantity	•	600	‡	Del. quantity cm3/1000 strokes	:	-10.5
cm3/1000 strokes Tolerance	•	34.3	‡	Tolerance cm3/1000 strokes	•	3.0
cm3/1000 strokes	•	1.5	+	Check tolerance cm3/1000s.		4.0
Check tolerance cm3/1000S.	:	3.0	Ŧ	Shutoff solenoid	•	
Shutoff solenoid Volt	:	12	‡	Volt	:	12
Rated speed rpm	:	1250	<u>†</u>	TIMING-DEVICE TRA	AVEL	DIFFERENCE
Del. quantity			+	Rated speed rpm	:	1500
cm3/1000 strokes Tolerance			‡	Del. quantity cm3/1000 strokes	:	-1.2
cm3/1000 strokes Check tolerance	:	0.5	‡	Tolerance cm3/1000 strokes	:	0.1
cm3/1000s.	:	2.2	+	Check tolerance cm3/1000s.		0.1
Shutoff solenoid Volt	:	12	‡	Shutoff solenoid	:	
			‡	Volt	:	12
ELECTR. SHUTOFF			<u>†</u>	DELIVERY DIFFEREN	ICE	
CONTROL LEVER, IDE	E ST	OP	+	Rated speed rpm	:	1500
Rated speed rpm	:	415	Į	Del. quantity cm3/1000 strokes	:	1.5
Del. quantity cm3/1000 strokes	:	1.5	‡	Tolerance cm3/1000 strokes	:	1.5
Tolerance cm3/1000 strokes		1.5	t	Check tolerance cm3/1000s.	•	1.5
Check tolerance			Ŧ	Shutoff solenoid	•	
cm3/1000s. Spread	•	1.5	‡	Volt	:	12
cm3/1000 strokes	:	5.0	1	PRESSURE DIFFEREN	ICE	
FULL-LOAD STOP CON	TROL	LEVER	Ī	Rated speed rpm	:	1500

Supply pomp

pressure bar : -1.0 Tolerance hPa : 0.2

Shutoff solenoid

Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500 Tolerance mm : 0.2

Check

tolerance mm : 0.6

Shutoff solenoid

Volt : 12

Rated speed rpm : 180

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,8
Tolerance mm : +-0,2
Dimension MS mm : 1,4
Tolerance mm : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 32,8..34,8

Control lever

position YB mm : 60,5..71,5

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 15.06.92 : ISO 4113 Test oil : 0 460 484 010 Part no. Pump designation: VE4/8F2300R171 Customer-spec, information Customer : PSA : XUD7 Motor TEST BENCH REQUIREMENTS Overflow 0.55 restriction mm : Inlet press. bar : 0.35 Tolerance bar 0.05 Test nozzle holde : 1 688 901 022 assembly Opening pressure 130 bar Tolerance bar : 1 680 750 073 Test lines Outside diameter : 6.00 x inside diameter : 2.00 x length mm : 450 **REMARKS**

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1250 Rated speed rpm :

3.6 Setting mm 0.2 Tolerance mm

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

1250 Rated speed rpm

Setting hPa 4.6 Tolerance hPa : 0.3

Shutoff solenoid

12 Vol+

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 28.5 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 4.0 Tolerance cm3/1000 strokes : 0.5

Shutoff solenoid 12 Volt

FULL-LOAD SPEED REGULATION

2440 Rated speed rpm Del. quantity cm3/1000 strokes : 22.0 Tolerance

cm3/1000 strokes :

Shutoff solenoid Volt 12

3.0

STARTING FUEL DELIVERY

100 Rated speed rpm Del. quantity cm3/1000 strokes : 62.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

12 Volt

LOAD-DEPENDENT START OF DELIVERY

SETTING

DELIVERY DIFFEREN	ICE		‡	Shutoff solenoid Volt	:	12	
Rated speed rpm	:	1250	‡	Rated speed rpm	:	800	
Del. quantity cm3/1000 strokes	:	-6.0	‡	Supply pomp pressure bar	:	3.3	
Tolerance cm3/1000 strokes	:	1.0	‡	Tolerance hPa Shutoff solenoid	:	0.3	
Shutoff solenoid Volt	:	12	‡	Volt	:	12	
PRESSURE DIFFEREN	ICE		‡	OVERFLOW QUANTITY			
Rated speed rpm	:	1250	‡	Rated speed rpm Overflow quantity			
Del. quantity cm3/1000 strokes	:	-0.2	‡	ccm/10s Tolerance		97.2	
Tolerance cm3/1000 strokes Shutoff solenoid		0.1	Ŧ	ccm/10s Check tolerance	•	41.6	
Volt		12	Ī	ccm/10s Shutoff solenoid	:	41.6	
TIMING-DEVICE TRA	VEL D	FFERENCE	Ī	Volt	:	12	
Rated speed rpm Del. quantity	:	1250	+	Rated speed rpm Overflow quantity	:	500	
cm3/1000 strokes Tolerance	:	-1.0	+	ccm/10s Tolerance	:	62.5	
cm3/1000 strokes Shutoff solenoid	:	0.1	‡	ccm/10s	:	20.8	
Volt	:	12	‡	Check tolerance ccm/10s	:	20.8	
INJECTION-PUMP TE	ST SF	PECIFICATIONS	‡	Shutoff solenoid Volt	:	12	
TIMING DEVICE CHA	RACTE	RISTIC	‡	DELIVERY AND BREAK	KAWA	AY CHARACT	FERISTIC
Rated speed rpm	:	2000	Ī	Rated speed rpm Del. quantity	:	2440	
SV travel mm Tolerance mm	:	7.9 0.4	Ī	cm3/1000 strokes Tolerance	:	22.0	
Check tolerance mm	:	0.7	‡	cm3/1000 strokes Check tolerance	:	3.0	
Shutoff solenoid Volt	:	12	‡	cm3/1000S. Shutoff solenoid	:	4.0	
Rated speed rpm	:	800	‡	Volt	:	12	
SV travel mm	:	1.2	‡	Rated speed rpm Del. quantity	:	2690	
Tolerance mm Check	:	0.4	‡	cm3/1000 strokes Check tolerance	:	7.0	
Shutoff solenoid	•	0.7	‡	cm3/1000s. Shutoff solenoid	:	3.5 12	
Volt SUPPLY PUMP PRESS	:	12		Volt Rated speed rpm	:	2540	
Rated speed rpm		2000	Í	Del. quantity cm3/1000 strokes	•	14.5	
Supply pomp pressure bar	:	6.7	<u> </u>	Tolerance cm3/1000 strokes		3.0	
Tolerance hPa	:	0.3	+	5 1305 0 ti 0100	•	2.0	

			•
Check tolerance			+ Del. quantity
cm3/1000s.	:	4.5	+ cm3/1000 strokes : 1.5
Shutoff solenoid			+ Tolerance
Volt	:	12	+ cm3/1000 strokes : 1.5
			+ Check tolerance
Rated speed rpm	:	2250	+ cm3/1000s. : 1.5
Del. quantity			+ Shutoff solenoid
cm3/1000 strokes	•	28.5	+ Volt : 12
Tolerance	•		
cm3/1000 strokes	•	1.0	
Check tolerance	•		+ ELECTR. SHUTOFF
cm3/1000s.		2.3	CONTROL LEVER, IDLE STOP
Shutoff solenoid	•	2.0	T CONTROL ELVER, IDEE STOP
Volt		12	Rated speed rpm : 375
VOCC	•	12	Del. quantity
Detail speed spe		800	cm3/1000 strokes : 1.5
Rated speed rpm	•	000	
Del. quantity		20.0	† Tolerance
cm3/1000 strokes	:	29.0	+ cm3/1000 strokes : 1.5
Tolerance		4.6	+ Check tolerance
cm3/1000 strokes	:	1.0	- cm3/1000s. : 1.5
Check tolerance			
cm3/1000s.	:	3.0	†
Shutoff solenoid			†
Volt	:	12	+
			†
Rated speed rpm	:	2000	+
Del. quantity			+
cm3/1000 strokes	:	28.5	+ CHECKING LOAD-DEPENDENT
Tolerance			+ START OF NEW THERY
cm3/1000 strokes	:	1.0	+
Check tolerance			+ DELIVERY DIFFERENCE
CITCOL SOCOLONIEC			
cm3/1000s.	:	2.3	+
	:	2.3	+ Rated speed rpm : 1250
cm3/1000s.	:	2.3	, ,
cm3/1000s. Shutoff solenoid	•	-	+ Rated speed rpm : 1250 + Del. quantity + cm3/1000 strokes : -9.0
cm3/1000s. Shutoff solenoid Volt	•	-	Del. quantity
cm3/1000s. Shutoff solenoid Volt Rated speed rpm	•	12	Del. quantity cm3/1000 strokes : -9.0 Tolerance
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity		12 500	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes		12	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	12 500 29.5	Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 strokes: 2.0 Check tolerance cm3/1000s. : 5.0
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	12 500	Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 strokes: 2.0 Check tolerance cm3/1000s.: 5.0 Shutoff solenoid
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	12 500 29.5 1.5	Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 strokes: 2.0 Check tolerance cm3/1000s. : 5.0
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	12 500 29.5	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	•	12 500 29.5 1.5 3.0	Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 strokes: 2.0 Check tolerance cm3/1000s.: 5.0 Shutoff solenoid
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:	12 500 29.5 1.5 3.0	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	•	12 500 29.5 1.5 3.0	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm	•	12 500 29.5 1.5 3.0	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity	•	12 500 29.5 1.5 3.0 12	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes	•	12 500 29.5 1.5 3.0 12	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	•	12 500 29.5 1.5 3.0 12 1250 28.5	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	•	12 500 29.5 1.5 3.0 12	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1 Check tolerance
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	•	12 500 29.5 1.5 3.0 12 1250 28.5 0.5	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	•	12 500 29.5 1.5 3.0 12 1250 28.5	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1 Shutoff solenoid
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	•	12 500 29.5 1.5 3.0 12 1250 28.5 0.5 2.3	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	•	12 500 29.5 1.5 3.0 12 1250 28.5 0.5	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1 Shutoff solenoid Volt : 12
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	•	12 500 29.5 1.5 3.0 12 1250 28.5 0.5 2.3	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1 Shutoff solenoid
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt		12 500 29.5 1.5 3.0 12 1250 28.5 0.5 2.3	Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 strokes: 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes: -1.0 Tolerance cm3/1000 strokes: 0.1 Check tolerance cm3/1000s. : 0.1 Shutoff solenoid Volt : 12 DELIVERY DIFFERENCE
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid		12 500 29.5 1.5 3.0 12 1250 28.5 0.5 2.3	Del. quantity cm3/1000 strokes : -9.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : -1.0 Tolerance cm3/1000 strokes : 0.1 Check tolerance cm3/1000s. : 0.1 Shutoff solenoid Volt : 12 DELIVERY DIFFERENCE Rated speed rpm : 1250
cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Shutoff solenoid Volt	: : : :	12 500 29.5 1.5 3.0 12 1250 28.5 0.5 2.3 12	Del. quantity cm3/1000 strokes: -9.0 Tolerance cm3/1000 strokes: 2.0 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes: -1.0 Tolerance cm3/1000 strokes: 0.1 Check tolerance cm3/1000s. : 0.1 Shutoff solenoid Volt : 12 DELIVERY DIFFERENCE

Tolerance 3.0 cm3/1000 strokes : Check tolerance cm3/1000s. 3.0 Shutoff solenoid

12 Volt

PRESSURE DIFFERENCE

1250 Rated speed rpm : Supply pomp pressure bar -0.8 Tolerance hPa 0.3 •

Shutoff solenoid Volt

TIMING-DEVICE TRAVEL DIFFERENCE

12

10.0

Rated speed rpm : 1250 Tolerance mm 0.5 Check tolerance mm 0.6 Shutoff solenoid

12 Volt

START TRANSITION

300 Rated speed rpm : Del. quantity cm3/1000 strokes : 24.0 Tolerance

cm3/1000 strokes : Shutoff solenoid

12 Volt

Rated speed rpm : 200

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : 20.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : +0,1 Tolerance mm : 5,5 Dimension KF mm : +-0,2 Tolerance mm Dimension MS mm : 1,4 Tolerance mm : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 19,7..21,7

Control lever

: 84,0..96,0 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.04.95 Test oil : ISO 4113

: 0 460 416 036 Part no. Pump designation: VE6/11F1250R181

Customer-spec. information : IVECO-FIAT Customer : 8065.05.200 Motor Power KW 74.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm 0.55

0.35 Inlet press. bar 0,05 Tolerance bar

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

172 har Tolerance bar

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1000 Tolerance mm 0.2

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1000

Setting hPa 5.5 : Tolerance hPa 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 800

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : 0.5

Spread

3.5 cm3/1000 strokes :

Shutoff solenoid 12 Volt

IDLE SETTING

Rated speed rpm 325

Del. quantity cm3/1000 strokes : 10.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

Spread

cm3/1000 strokes : 3.5

Check tolerance

4.0 cm3/1000s.

FULL-LOAD SPEED REGULATION

Rated speed rpm 1350

Del. quantity

cm3/1000 strokes : 36.0

Tolerance

3.0 cm3/1000 strokes :

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

120.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid	42	†		
Volt	: 12	+ Check tolerance + ccm/10s + Shutoff solenoid	:	22.2
		Volt	:	12
TNJECTION-PUMP TE	ST SPECIFICATIONS	DELIVERY AND BREA	KAWA	Y CHARACTERISTIC
		Rated speed rpm	:	1350
TIMING DEVICE CHA		+ Del. quantity + cm3/1000 strokes	:	36.0
Rated speed rpm Tolerance mm	: 600 : 0.4	Tolerance cm3/1000 strokes	:	3.0
Check tolerance mm	: 0.7	+ Check tolerance - cm3/1000s.	:	6.0
Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt	:	12
Rated speed rpm		Rated speed rpm	:	1400
Tolerance mm Check tolerance mm	: 0.4	+ Del. quantity + cm3/1000 strokes + Shutoff solenoid	:	5.5
Shutoff solenoid Volt	: 12	Volt	:	12
	URE CHARACTERISTIC	Rated speed rpm Del. quantity	:	1450
Rated speed rpm	: 1250	- cm3/1000 strokes - Tolerance	:	1.5
Supply pomp pressure bar	: 6.6	cm3/1000 strokes Check tolerance	:	1.5
Tolerance hPa Shutoff solenoid	: 0.3	cm3/1000s. Shutoff solenoid	:	1.5
Volt	: 12	Volt	:	12
Rated speed rpm Supply pomp	: 500	Rated speed rpm Del. quantity	:	1250
pressure bar Tolerance hPa	: 3.4 : 0.3	cm3/1000 strokes Tolerance	:	54.5
Shutoff solenoid Volt	: 12	cm3/1000 strokes Check tolerance	:	1.5
OVERFLOW QUANTITY		cm3/1000s. Shutoff solenoid	:	3.5
Rated speed rpm	: 1250	+ Volt	:	12
Overflow quantity ccm/10s	: 97.2	Rated speed rpm Del. quantity	:	500
Tolerance ccm/10s	: 41.6	cm3/1000 strokes Tolerance	:	61.0
Check tolerance		cm3/1000 strokes Check tolerance	:	1.5
ccm/10s Shutoff solenoid	: 41.6	cm3/1000s. Shutoff solenoid	:	3.5
Volt	: 12	Volt	:	12
Rated speed rpm Overflow quantity	: 500	Rated speed rpm Del. quantity	:	800
ccm/10s Tolerance	: 63.8	cm3/1000 strokes Tolerance	:	64.0
ccm/10s	: 22.2	cm3/1000 strokes	:	0.5

Check tolerance cm3/1000s.	: 3.0	START TRANSITION
Shutoff solenoid Volt	: 12	Rated speed rpm : 250 Del. quantity
		- Tolerance
ELECTR. SHUTOFF CONTROL LEVER, ID	OLF STOP	cm3/1000 strokes : 10.0 Shutoff solenoid
2002117		+ Volt : 12
Rated speed rpm Del. quantity		+
cm3/1000 strokes Tolerance		Rated speed rpm : 150 Del. quantity
cm3/1000 strokes Check tolerance	: 1.5	cm3/1000 strokes : 120.0 Tolerance
cm3/1000s. Spread	: 1.5	cm3/1000 strokes : 25.0 Shutoff solenoid
cm3/1000 strokes	: 5.0	volt : 12
FULL-LOAD STOP CO	NTROL LEVER	ASSEMBLY AND ADJUSTMENT DIMENSI
Rated speed rpm Del. quantity	: 325	Dimension K mm : 3,3
cm3/1000 strokes Tolerance	: 1.5	Tolerance mm : +-0,1 Dimension KF mm : 5,3
cm3/1000 strokes Spread	: 1.5	Tolerance mm : +0,2 Dimension MS mm : 1,6
cm3/1000 strokes Check tolerance		Tolerance mm : +-0,2
cm3/1000s. Spread	: 1.5	1
cm3/1000 strokes	: 5.0	CONTROL LEVER POSITION SET
IDLE DELIVERY		1
Rated speed rpm Del. quantity	: 400	Control lever position YA mm : 34,936,9
cm3/1000 strokes Tolerance	: 1.5	Control lever
cm3/1000 strokes Check tolerance	: 1.5	position YB mm : 45,751,1
cm3/1000s. Shutoff solenoid	: 1.5	
/olt	: 12	End of test-specification sheet
Rated speed rpm Del. quantity	: 360	‡
cm3/1000 strokes	: 5.0	1
cm3/1000 strokes Check tolerance	: 3.0	1
m3/1000s.	: 4.0	-
Shutoff solenoid		+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.06.95 Test oil : ISO 4113

Part no. : 0 460 426 143 Pump designation : VE6/12F1150R225-23

Customer-spec. information Customer : CDC

Motor : 6 BT -5.9 IND

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,3 Tolerance mm : +-0,02

Outlet : D

Prestroke

(as of UT) mm : 0.3Tolerance mm : +-0.02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 750

Setting mm : 3.6
Tolerance mm : 0.2

Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 750

Setting hPa : 3.8 Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1150 Del. quantity

cm3/1000 strokes : 71.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0 Shutoff solenoid

Volt : 12

IDLE SETTING

Rated speed rpm : 375

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : 3.0 Shutoff solenoid

Volt Spread

cm3/1000 strokes : 5.5

12

Check tolerance

cm3/1000s. : 7.0

FULL-LOAD SPEED REGULATION

			t			
Rated speed rpm	:	1220	†	OVERFLOW QUANTIT	Y	
Del. quantity cm3/1000 strokes	:	53.0	Ī	Rated speed rpm	:	1150
Tolerance			+	Overflow quantity	/	
cm3/1000 strokes	:	3.0	†	ccm/10s	:	97.2
Shutoff solenoid Volt	•	12	1	Tolerance ccm/10s	:	41.6
VOCC	•	12	1	CCIII/ TOS	•	41.0
STARTING FUEL DEL	IVE	RY	+	Check tolerance		
Detrol enough sum		100	†	ccm/10s	:	41.6
Rated speed rpm Del. quantity	:	100	I	Shutoff solenoid Volt	•	12
cm3/1000 strokes	:	90.0	+	***************************************	•	
Tolerance			+	Rated speed rpm	:	500
cm3/1000 strokes Shutoff solenoid	:	30.0	†	Overflow quantity ccm/10s	/ .	63.8
Volt	:	12	I	Tolerance	•	03.0
	•		+	ccm/10s	:	22.2
			+			
			1	Check tolerance ccm/10s	:	22.2
			I	Shutoff solenoid	•	£ £ . £
INJECTION-PUMP TE	ST S	SPECIFICATIONS	+	Volt	:	12
TIMENO DELITOR CHA		FRIOTIA	†	DELTHEON AND DOE	NI - N - 1 - 1	AV AUADACTEDICTI
TIMING DEVICE CHA	ARACI	ERISTIC	Ī	DELIVERY AND BREA	AKAWA	AY CHARACTERISTIC
Rated speed rpm	:	1100	+	Rated speed rpm	:	1220
			+	Del. quantity		
SV travel mm	:	5.9	†	cm3/1000 strokes	:	53.0
Tolerance mm Check	:	0.4	Ī	Tolerance cm3/1000 strokes	:	3.0
tolerance mm	:	0.7	1	Check tolerance	•	0.0
Shutoff solenoid		4.0	+	cm3/1000s.	:	6.0
Volt	:	12	1	Shutoff solenoid Volt	:	12
Rated speed rpm	:	500	Į	VOLU	•	12
			+	Rated speed rpm	:	1250
SV travel mm	•	1.9	†	Del. quantity		75.0
Tolerance mm Check	•	0.4	1	cm3/1000 strokes Check tolerance	:	35.0
tolerance mm	:	0.7	Ţ	cm3/1000s.	:	20.0
Shutoff solenoid			+	Shutoff solenoid		
Volt	:	12	†	Volt	:	12
SUPPLY PUMP PRESS	URE	CHARACTERISTIC	I	Rated speed rpm	:	1300
	0110		+	Del. quantity		
Rated speed rpm	:	1100	+	cm3/1000 strokes	:	1.5
Supply pomp pressure bar		5.1	İ	Tolerance cm3/1000 strokes	:	1.5
Tolerance hPa	•	0.3	Ī	Check tolerance	•	1.0
Shutoff solenoid	•		+	cm3/1000s.	:	1.5
Volt	•	12	†	Shutoff solenoid		12
Rated speed rpm	:	500	Ī	Volt	:	12
Supply pomp	•	J00	1	Rated speed rpm	:	750
pressure bar	:	2.7	+	Del. quantity		
Tolerance hPa Shutoff solenoid	:	0.3	†	cm3/1000 strokes Tolerance	:	77.0
Volt	:	12	I	cm3/1000 strokes	:	2.0
	•	. —	r		-	

Check tolerance		7.0	+ Del. quantity
cm3/1000S. Shutoff solenoid	:	3.0	cm3/1000 strokes : 1.5 Tolerance
		12	
Volt	•	12	
Data di anna di una		500	+ Spread
Rated speed rpm	:	500	+ cm3/1000 strokes : 5.0
Del. quantity		10.5	+ Check tolerance
cm3/1000 strokes	:	62.5	+ cm3/1000s. : 1.5
Tolerance			+ Spread
cm3/1000 strokes	:	4.0	+ cm3/1000 strokes : 5.0
Check tolerance			+
cm3/1000S.	:	6.0	+ IDLE DELIVERY
Shutoff solenoid			+
Volt	:	12	+ Rated speed rpm : 450
			+ Del. quantity
Rated speed rpm	:	1150	+ cm3/1000 strokes : 2.0
Del. quantity			+ Tolerance
cm3/1000 strokes	•	71.5	+ cm3/1000 strokes : 2.0
Tolerance	•	· • • •	- Check tolerance
cm3/1000 strokes	•	0.5	- cm3/1000s. : 2.0
Check tolerance	•	3.7	Shutoff solenoid
cm3/1000S.		3.0	Volt : 12
Shutoff solenoid	•	5.0	Ι νου
Volt	:	12	I
VOCC	•	16	I
			I
MECHANICAL SHUTOF	E		Ī
HERUMINITUME SUDIOL	r		I
Rated speed rpm	•	1150	T START TRANSITION
	•	טכוו	T START TRANSPITOIN
Del. quantity	_	4 5	T Dated mand and 2/0
cm3/1000 strokes	•	1.5	+ Rated speed rpm : 240
Tolerance		4.5	+ Del. quantity
cm3/1000 strokes	:	1.5	+ cm3/1000 strokes : 40.0
Spread			+ Tolerance
cm3/1000 strokes	•	5.0	+ cm3/1000 strokes : 20.0
Check tolerance			+ Shutoff solenoid
cm3/1000s.	:	1.5	† Volt : 12
Spread			+
cm3/1000 strokes	:	5.0	+
Shutoff solenoid			+ Rated speed rpm : 130
Volt	•	12	+ Del. quantity
		_	+ cm3/1000 strokes : 100.0
			- Tolerance
ELECTR. SHUTOFF			+ cm3/1000 strokes : 30.0
CONTROL LEVER, ID	LE S	TOP	+ Shutoff solenoid
			+ Volt : 12
Rated speed rpm	:	375	1
Del. quantity	-		
cm3/1000 strokes	•	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
AND PURCO	•	(• •	T TOUR TOUR THE THE TOUR
		4 5	Dimension KF mm : 5,2
olerance		7 6	T Vimension of mm : 3/2
olerance m3/1000 strokes	:	1.5	
Tolerance cm3/1000 strokes Check tolerance			+ Tolerance mm : +-0,2
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.			+ MS1 dimension mm : 1,6
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Epread	:	1.5	+ Tolerance mm : 1-0,2 + MS1 dimension mm : 1,6 + Tolerance mm : +0.15/-0,1
Tolerance cm3/1000 strokes Check tolerance	:	1.5	+ MS1 dimension mm : 1,6
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spread cm3/1000 strokes	•	1.5 5.0	+ MS1 dimension mm : 1,6
olerance m3/1000 strokes heck tolerance m3/1000s. pread m3/1000 strokes	•	1.5 5.0	MS1 dimension mm : 1,6 Tolerance mm : +0.15/-0,1
olerance m3/1000 strokes heck tolerance m3/1000s. pread m3/1000 strokes ULL-LOAD STOP COP	: : NTROL	1.5 5.0 L LEVER	MS1 dimension mm : 1,6 Tolerance mm : +0.15/-0,1 CONTROL LEVER POSITION
Tolerance cm3/1000 strokes theck tolerance cm3/1000s. Epread	: : NTROL	1.5 5.0 L LEVER	MS1 dimension mm : 1,6 Tolerance mm : +0.15/-0,1

Control lever position YA mm : 35,8..37,8

Control lever

position YB mm : 41,5..47,1

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.03.95 Edition : ISO 4113 Test oil

Part no. : 0 460 414 124 Pump designation : VE4/11F2250R274-1

Customer-spec. information : PERKINS Customer : Prima M 80 T Motor Power KW 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 450 x length mm :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Aneroid pressure

1000 hPa

Setting mm 3.8 : Tolerance mm 0.2

SUPPLY PUMP PRESSURE

1500 Rated speed rpm

Aneroid pressure

1000 hPa :

7.1 Setting hPa Tolerance hPa 0.3 :

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500 Aneroid pressure

1000 hPa

Del. quantity cm3/1000 strokes : 61.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. 4.0

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600 Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. 4.0

Check tolerance

cm3/1000s. 4.0

IDLE SETTING

Rated speed rpm 350

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : 1.0

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. 3.0

FULL-LOAD SPEED REGULATION

			+	Aneroid pressure			
Rated speed rpm	:	2500	+	hPa	:	1000	
Pressure hPa	:	1000	+	Overflow quantity	/		
Del. quantity	_	/ 0 0	+	ccm/10s	:	97.2	
cm3/1000 strokes Tolerance	:	40.0	Ī	Tolerance ccm/10s		41.6	
cm3/1000 strokes	:	2.0	Ţ	CCIII/ 105	•	41.0	
	•		+	Check tolerance			
STARTING FUEL DELIVERY			+	ccm/10s	:	41.6	
Rated speed rpm	:	100	1	Rated speed rpm	:	600	
Del. quantity	•	100	I	Aneroid pressure	•	000	
cm3/1000 strokes	:	80.0	+	hPa	:	1000	
Tolerance		40.0	+	Overflow quantity	/	47.0	
cm3/1000 strokes	:	18.0	†	ccm/10s Tolerance	:	63.8	
			Ī	ccm/10s	:	22.2	
			+	· · · · · · · · · · · · · · · · · · ·	·	2212	
			+	Check tolerance			
TALLECTION DUMP TO		PRETEIRATIONS		ccm/10s	:	22.2	
INJECTION-PUMP TE	:51 3	SPECIFICATIONS	I	DELIVERY AND BREA	K A W	AY CHARACTERIS	רזר
TIMING DEVICE CHA	RACT	TERISTIC	1	DELIVERY AND ONE	11 \/ 100	AT CHARACTERED	10
			+	Rated speed rpm	:	2500	
Rated speed rpm	:	1900	+	Aneroid pressure		4000	
Aneroid pressure hPa	•	1000	Ī	hPa Del. quantity	:	1000	
Tolerance mm	:	0.5	4	cm3/1000 strokes	:	40.0	
Check		_	+	Tolerance		_	
tolerance mm	:	0.7	+	cm3/1000 strokes	:	2.0	
Rated speed rpm	:	1100	Ī	Check tolerance cm3/1000s.	:	6.0	
Aneroid pressure	•	1100	1	CIID7 10000.	•	0.0	
hPa	:	1000	+	Rated speed rpm	:	2450	
		4 /	+	Aneroid pressure		4000	
SV travel mm Tolerance mm	:	1.4 0.5	Ī	hPa Del. quantity	:	1000	
Check	•	0.5	1	cm3/1000 strokes	:	60.0	
tolerance mm	:	0.7	+	Tolerance			
			+	cm3/1000 strokes	:	6.0	
SUPPLY PUMP PRESS	UKE	CHARACTERISTIC	İ	Rated speed rpm	:	2700	
Rated speed rpm	:	1900	1	Aneroid pressure	•	2,00	
Aneroid pressure			+	hPa	:	1000	
hPa	:	1000	+	Del. quantity		4 5	
Supply pomp pressure bar		8.0	Ī	cm3/1000 strokes Tolerance	:	1.5	
Tolerance hPa	:	0.3	I	cm3/1000 strokes	:	1.5	
			÷	Check tolerance			
Rated speed rpm	:	600	+	cm3/1000s.	:	1.5	
Aneroid pressure hPa		1000	İ	Rated speed rpm	:	600	
Supply pomp	•	1000	Ţ	Aneroid pressure	•	000	
pressure bar	:	5.1	+	hPa	:	300	
Tolerance hPa	:	0.3	+	1.04/			
OVERFLOW QUANTITY			İ	LDA/ HBA stroke mm	:	6.1	
OVERTEOM MONITH			Į	Del. quantity	•	0.1	
Rated speed rpm	:	2250	+	cm3/1000 strokes	:	37.0	
			+				

Tolerance cm3/1000 strokes	:	0.5	‡	Shutoff solenoid Volt	: 12
Check tolerance cm3/1000s.	:	4.5	Ī		
Rated speed rpm	:	2250	+	IDLE DELIVERY	
Aneroid pressure		1000	<u>†</u>	Rated speed rpm Del. quantity	: 500
Del. quantity cm3/1000 strokes	•	66.7	Ŧ	cm3/1000 strokes Tolerance	: 1.5
Tolerance			+	cm3/1000 strokes	: 1.5
cm3/1000 strokes Check tolerance	•	2.0	‡	Check tolerance cm3/1000s.	: 1.5
cm3/1000s.	:	3.0	† +	Rated speed rpm	: 250
Rated speed rpm Aneroid pressure		600	1	Del. quantity cm3/1000 strokes	
hPa	:	1000	+	Tolerance cm3/1000 strokes	
Del. quantity cm3/1000 strokes Tolerance	:	58.5	-	cm3/1000 Strokes	: 6.0
cm3/1000 strokes Check tolerance	:	4.0	$\frac{1}{1}$		
cm3/1000s.	:	5.0	<u> </u>		
Rated speed rpm Aneroid pressure	:	1500	+	START TRANSITION	
hPa	:	1000	Ŧ	Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	:	61.0	+	Del. quantity cm3/1000 strokes	: 20.0
Tolerance cm3/1000 strokes	:	0.5	Ŧ	Tolerance cm3/1000 strokes	: 10.0
Check tolerance cm3/1000s.	:	3.0	†		
			‡	Rated speed rpm Del. quantity	: 350
MECHANICAL SHUTOF	F		1	cm3/1000 strokes Tolerance	: 35.0
Rated speed rpm Aneroid pressure		2250	+	cm3/1000 strokes	: 8.0
hPa Del. quantity	:	1000	1	ASSEMBLY AND AD III	STMENT DIMENSIONS
cm3/1000 strokes Tolerance	:	1.5	$\frac{1}{1}$	ASSERBET ARE AUGU	STREAT DIRECTORS
cm3/1000 strokes	:	1.5	Ŧ	LDA/	: 6.1
Check tolerance cm3/1000s.	:	1.5	Ī	HBA stroke mm Dimension K mm Tolerance mm	: 3,3
				Dimension KF mm	: 6,6
ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	STOP	‡	Tolerance mm MS1 dimension mm	: 1,9
. D. A. al. amazada uma		750	+	Tolerance mm	: +0,15/-0,1
Rated speed rpm Del. quantity		350	‡		
cm3/1000 strokes Tolerance	:	1.5	‡	CONTROL LEVER POS	ITION
cm3/1000 strokes Check tolerance	:	1.5	1	SET	
cm3/1000s.	:	1.5	7		
			+		

Control lever

position YA mm : 37,0..39,0

Control lever

position YB mm : 57,0..68,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.12.92 Test oil : ISO 4113

Part no. : 0 460 414 046 Pump designation : VE4/11F1500R275

Customer—spec. information
Customer : PERKINS
Motor : 500 SERIES

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0.5Tolerance mm : +-0.02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1100

Setting mm : 2.7
Tolerance mm : 0.2
Shutoff solenoid

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1100

Setting hPa : 5.2 Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1200 Del. quantity

cm3/1000 strokes : 45.5 Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.5

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

12

Volt Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 3.0

KSB/AFB Volt : 12

		+ Shutoff solenoid		
FULL-LOAD SPEED RE	EGULATION	Volt	: 12	
Rated speed rpm Del. quantity	: 1550	Rated speed rpm	: 1500	
cm3/1000 strokes Tolerance	: 32.0	SV travel mm Tolerance mm	: 4.1 : 0.4	
cm3/1000 strokes Shutoff solenoid	: 5.0	+ Check + tolerance mm	: 0.7	
Volt	: 12	+ Shutoff solenoid + Volt	: 12	
KSB/AFB Volt	: 12	KSB/AFB Volt	: 12	
STARTING FUEL DELI	IVERY	CURDLY DUMP PRES	LIDE CHADACTE	DICTIC
Rated speed rpm	: 100	SUPPLY PUMP PRESS		K1211C
Del. quantity cm3/1000 strokes	: 85.0	+ Rated speed rpm + Supply pomp		
Tolerance cm3/1000 strokes	: 15.0	+ pressure bar + Tolerance hPa	: 6.7	
Shutoff solenoid	. 13.0	+ Shutoff solenoid	. 0.3	
Volt	: 12	Volt	: 12	
KSB/AFB Volt	: 12	KSB/AFB Volt	: 12	
		+ Rated speed rpm + Supply pomp		
		+ pressure bar	: 3.8	
		+ Tolerance hPa	: 0.3	
INJECTION—PUMP TES		+ Shutoff solenoid + Volt	: 12	
TIMING DEVICE CHAR		KSB/AFB Volt	: 12	
Rated speed rpm Tolerance mm Check	: 1350 : 0.4	OVERFLOW QUANTITY		
tolerance mm Shutoff solenoid	: 0.7	Rated speed rpm Overflow quantity	: 1450	
Volt	: 12	ccm/10s Tolerance	: 97.2	
KSB/AFB Volt	: 12	ccm/10s	: 41.6	
Rated speed rpm	: 700	Check tolerance ccm/10s	: 41.6	
SV travel mm Tolerance mm	: 0.5 : 0.4	+ Shutoff solenoid + Volt	: 12	
Check tolerance mm	: 0.7	KSB/AFB Volt	: 12	
Shutoff solenoid Volt	: 12	Rated speed rpm	: 600	
KSB/AFB Volt	: 12	Overflow quantity ccm/10s	: 63.8	
Rated speed rpm	: 700	Tolerance ccm/10s	: 22.2	
SV travel mm	: 2.2	Check tolerance		
Tolerance mm Check	: 1.0	ccm/10s Shutoff solenoid	: 22.2	
	: 1.2	Volt	: 12	

		+
KSB/AFB Volt	: 12	Rated speed rpm : 600
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	+ Del. quantity + cm3/1000 strokes : 20.5 + Tolerance
Rated speed rpm	: 1550	+ cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes	: 32.0	+ Check tolerance - cm3/1000s. : 3.0
Tolerance cm3/1000 strokes Check tolerance	: 5.0	+ Shutoff solenoid + Volt : 12
cm3/1000s. Shutoff solenoid	: 6.0	KSB/AFB Volt : 12
Volt	: 12	Rated speed rpm : 1200 Del. quantity
KSB/AFB Volt	: 12	cm3/1000 strokes : 45.5 Tolerance
Rated speed rpm Del. quantity	: 1570	cm3/1000 strokes : 0.5 Check tolerance
cm3/1000 strokes Check tolerance	: 16.0	cm3/1000s. : 2.5 Shutoff solenoid
cm3/1000s. Shutoff solenoid	: 10.0	Volt : 12
Volt	: 12	
KSB/AFB Volt	: 12	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
Rated speed rpm Del. quantity	: 1630	Rated speed rpm : 300
cm3/1000 strokes Tolerance	: 1.5	Del. quantity cm3/1000 strokes : 1.5
cm3/1000 strokes	: 1.5	Tolerance : 1.5 cm3/1000 strokes : 1.5
Check tolerance cm3/1000s.	: 1.5	- Check tolerance
Shutoff solenoid Volt	: 12	+
KSB/AFB Volt	: 12	+ KSB/AFB Volt : 12
Rated speed rpm	: 1450	+ FULL-LOAD STOP CONTROL LEVER
Del. quantity cm3/1000 strokes	: 45.5	Rated speed rpm : 300 Del. quantity
Tolerance cm3/1000 strokes	: 1.5	cm3/1000 strokes : 1.5 Tolerance
Check tolerance cm3/1000s.	: 3.0	cm3/1000 strokes : 1.5 Check tolerance
Shutoff solenoid Volt	: 12	cm3/1000s. : 1.5
KSB/AFB Volt	: 12	+ KSB/AFB Volt : 12
Rated speed rpm	: 800	IDLE DELIVERY
Del. quantity cm3/1000 strokes	: 30.0	Rated speed rpm : 430 Del. quantity
Tolerance cm3/1000 strokes	: 1.5	cm3/1000 strokes : 1.5 Tolerance
Shutoff solenoid Volt	: 12	cm3/1000 strokes : 1.5 Check tolerance
KSB/AFB Volt	: 12	+ cm3/1000s. : 1.5

Shutoff solenoid Volt : KSB/AFB Volt :

12

12

12

8.0

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 6.0
Tolerance

Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.5

Volt : 12

START TRANSITION

Shutoff solenoid

KSB/AFB Volt

Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 27.0 Tolerance

cm3/1000 strokes : 8.0

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 37.0

Tolerance

cm3/1000 strokes

Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : Dimension KF mm : 5,4
Tolerance mm : +-0,2
MS1 dimension mm : 1,6

Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,0..39,0

Control lever

position YB mm : 58,7..69,9

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.09.95 Edition : ISO 4113 Test oil

: 0 460 424 036 Part no. Pump designation: VE4/12F1400R279

Customer-spec. information Customer : PERKINS : NA 4.40 LKW Motor

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature *C 45 Tolerance °C

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 020 assembly

Opening pressure

har 172 Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0

Outlet

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 950

2.5 Setting mm Tolerance mm 0.2

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 950

5.7 Setting hPa Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

800 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 77.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.5

Shutoff solenoid

Volt 12

IDLE SETTING

Rated speed rpm 300

Del. quantity cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt

12 Spread

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s.3.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1600

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

12 Volt

STARTING FUEL DELI	IVERY	+ Tolerance + ccm/10s	:	41.6
		+		
Rated speed rpm Del. quantity		+ Check tolerance ccm/10s	:	41.6
cm3/1000 strokes Tolerance		+ Shutoff solenoi + Volt	d :	12
cm3/1000 strokes Shutoff solenoid		+ Rated speed rpm		500
Volt	: 12	+ Overflow quanti - ccm/10s - Tolerance	ty :	63.8
		ccm/10s	:	22.2
INJECTION—PUMP TES	ST SPECIFICATIONS	Check tolerance		22.2
THUECITON-FUMP 163	ST SPECIFICATIONS	F Shutoff solenoi	d .	22.2
TIMING DEVICE CHAR	RACTERISTIC	Volt	:	12
Rated speed rpm	: 800	DELIVERY AND BR	EAKAWA	Y CHARACTERISTIC
SV travel mm	: 0.8	Rated speed rpm		1600
Tolerance mm Check	: 0.3	+ Del. quantity - cm3/1000 stroke	s:	24.0
tolerance mm Shutoff solenoid	: 0.7	+ Tolerance - cm3/1000 stroke		3.0
Volt	: 12	+ Check tolerance cm3/1000s.	:	6.0
	: 1400	+ Shutoff solenoi + Volt	a :	12
SV travel mm Tolerance mm	: 3.3 : 0.4	Rated speed rpm	:	1500
Check tolerance mm Shutoff solenoid	: 0.7	Del. quantity cm3/1000 stroke Tolerance	s:	57.0
Volt	: 12	cm3/1000 stroke		6.0
SUPPLY PUMP PRESSU	RE CHARACTERISTIC	cm3/1000s. Shutoff solenoi	:	7.0
Rated speed rpm Supply pomp	: 1400	Volt	:	12
pressure bar	: 7.5	+ Rated speed rpm	:	1680
Tolerance hPa Shutoff solenoid	: 0.3	+ Del. quantity + cm3/1000 stroke	s:	1.5
Volt	: 12	Tolerance cm3/1000 stroke	s:	1.5
Rated speed rpm	: 800	+ Check tolerance cm3/1000s.	•	1.5
Rated speed rpm Supply pomp	: 500	+ Shutoff solenoid	d :	12
pressure bar	: 3.7	Total analy man		1/00
Tolerance hPa Shutoff solenoid	: 0.3	+ Rated speed rpm + Del. quantity		1400
Volt	: 12	cm3/1000 stroke	s:	71.5
OVERFLOW QUANTITY		cm3/1000 strokes		1.5
Rated speed rpm	: 1400	cm3/1000s. Shutoff solenoid	:	3.0
Overflow quantity ccm/10s	: 97.2	+ Volt	:	12

	500 ‡	Del. quantity cm3/1000 strokes : 8.5
Del. quantity cm3/1000 strokes : Tolerance	68.5	Tolerance cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes : Check tolerance	1.5	cm3/1000s. : 4.5 Shutoff solenoid
cm3/1000s. : Shutoff solenoid	3.0	Volt : 12
Volt :	12	Rated speed rpm : 350 Del. quantity
Del. quantity	800	cm3/1000 strokes : 17.5 Tolerance
cm3/1000 strokes : Tolerance	77.0	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes : Check tolerance	0.5	cm3/1000s. : 5.0 Shutoff solenoid
cm3/1000s. : Shutoff solenoid	3.0	Volt : 12
Volt :	12	
MECHANICAL SHUTOFF	 	
Rated speed rpm : 7	400	START TRANSITION
cm3/1000 strokes : Tolerance	1.5	Rated speed rpm : 250 Del. quantity
cm3/1000 strokes : Check tolerance	1.5	cm3/1000 strokes : 50.0 Tolerance
cm3/1000s. : Shutoff solenoid	1.5	cm3/1000 strokes : 15.0 Shutoff solenoid
Volt :	12	Volt : 12
ELECTR. SHUTOFF	+	Rated speed rpm : 150
CONTROL LEVER, IDLE STOP	+	Del. quantity cm3/1000 strokes : 115.0
Del. quantity	300 +	Tolerance cm3/1000 strokes : 15.0
cm3/1000 strokes : Tolerance	1.5	Shutoff solenoid Volt : 12
cm3/1000 strokes : Check tolerance	1.5	
cm3/1000s. :	1.5	ASSEMBLY AND ADJUSTMENT DIMENSIONS
FULL-LOAD STOP CONTROL I	+	Dimension K mm : 3,3 Tolerance mm : +-0,1
Rated speed rpm : 3 Del. quantity	300	Dimension KF mm : KOT Dimension MS mm : 1,1
cm3/1000 strokes : Tolerance	1.5	Tolerance mm : +-0,2
cm3/1000 strokes : Check tolerance	1.5	
cm3/1000s. :	1.5	CONTROL LEVER POSITION SET
IDLE DELIVERY	1	
Rated speed rpm : 4	400	Control lever position YA mm : 37,239,2

Control lever position YB mm	: 42,751,3	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.09.94 Edition : ISO 4113 Test oil

Part no. : 0 460 484 089 Pump designation: VE4/8F2300R317-7

Customer-spec. information : RENAULT Customer : F8Q - 742 Motor 47.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

4.3 Setting mm : Tolerance mm 0.2 : Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa 4.8 Tolerance hPa 0.3 Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

0.5

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 31.5 Tolerance

cm3/1000 strokes :

Spread cm3/1000 strokes : 2.5

Shutoff solenoid 12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

550 Rated speed rpm : Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

Rated speed rpm 2450

Del. quantity

cm3/1000 strokes : 26.0

Tolerance

cm3/1000 strokes 3.0

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : 15.0

		1	
Shutoff solenoid Volt	: 12	Rated speed rpm	: 310
		SV travel mm Tolerance mm	: 1.8 : 1.2
LOAD-DEPENDENT ST SETTING	ART OF DELIVERY	Check tolerance mm	: 1.2
DELIVERY DIFFEREN	ICE	+ Shutoff solenoid + Volt	d : 12
Rated speed rpm	: 1250	+ KSB/AFB Volt	: 12
Del. quantity cm3/1000 strokes Tolerance	: -8.7	Rated speed rpm	: 500
cm3/1000 strokes Shutoff solenoid	: 1.0	SV travel mm Tolerance mm	: 3.1 : 1.2
Volt	: 12	Check tolerance mm	: 1.2
PRESSURE DIFFEREN		+ Shutoff solenoid + Volt	: 12
Rated speed rpm Del. quantity cm3/1000 strokes		KSB/AFB Volt	: 12
Tolerance cm3/1000 strokes		SUPPLY PUMP PRES	SSURE CHARACTERISTIC
Shutoff solenoid Volt	: 12	Rated speed rpm Supply pomp	: 2000
TIMING-DEVICE TRA	VEL DIFFERENCE	+ pressure bar + Tolerance hPa	: 6.7 : 0.3
Rated speed rpm	: 1250	+ Shutoff solenoid + Volt	: 12
Del. quantity cm3/1000 strokes Tolerance	: -0.4	Rated speed rpm Supply pomp	: 750
cm3/1000 strokes Shutoff solenoid	: 0.1	pressure bar Tolerance hPa	: 3.4 : 0.3
Volt	: 12	Shutoff solenoid Volt	
INJECTION-PUMP TE	ST SPECIFICATIONS	OVERFLOW QUANTIT	·Y
TIMING DEVICE CHA	RACTERISTIC	Rated speed rpm Overflow quantit	: 2250
Rated speed rpm	: 2000	ccm/10s	97.2
SV travel mm Tolerance mm	: 8.0 : 0.4	ccm/10s	: 41.6
Check tolerance mm	: 0.7	+ Check tolerance + ccm/10s	. 41.6
Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt	: 12
Rated speed rpm	: 750	Rated speed rpm Overflow quantit	; 750
SV travel mm Tolerance mm	: 2.0 : 0.4	ccm/10s Tolerance	´: 63.8
Check tolerance mm	: 0.7	+ ccm/10s	: 22.2
Shutoff solenoid Volt	: 12	+ Check tolerance + ccm/10s	: 22.2

J05

Shutoff solenoid Volt	: 12	‡	Shutoff solenoid Volt	:	12	
DELIVERY AND BREA	KAWAY CHARACTER	RISTIC	Rated speed rpm Del. quantity	:	750	
Rated speed rpm Del. quantity	: 2450	-	cm3/1000 strokes Tolerance	:	31.6	
cm3/1000 strokes Tolerance	: 26.0	Ŧ	cm3/1000 strokes Check tolerance	:	1.5	
cm3/1000 strokes Check tolerance		Ŧ	cm3/1000s. Shutoff solenoid		2.3	
cm3/1000s. Shutoff solenoid	: 4.0	$\frac{1}{2}$	Volt	:	12	
Volt	: 12	1	Rated speed rpm Del. quantity	:	1250	
Rated speed rpm Del. quantity	: 2650	<u> </u>	cm3/1000 strokes Tolerance	:	31.5	
cm3/1000 strokes Check tolerance	: 11.0	<u> </u>	cm3/1000 strokes Check tolerance		0.5	
cm3/1000s. Shutoff solenoid		‡	cm3/1000s. Shutoff solenoid	:	2.3	
Volt	: 12	+	Volt	:	12	
Rated speed rpm Del. quantity		‡				
cm3/1000 strokes Tolerance		‡	ELECTR. SHUTOFF CONTROL LEVER, ID	LE ST	ГОР	
cm3/1000 strokes Check tolerance		‡	Rated speed rpm	:	410	
cm3/1000S. Shutoff solenoid		‡	Del. quantity cm3/1000 strokes	:	1.5	
Volt	: 12	‡	Tolerance cm3/1000 strokes		1.5	
Rated speed rpm Del. quantity		‡	Check tolerance cm3/1000s.		1.5	
cm3/1000 strokes Tolerance		Ŧ	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes Check tolerance cm3/1000s.		Ŧ	FULL-LOAD STOP CO	NTROL	. LEVER	
Shutoff solenoid Volt	: 2.3 : 12	\pm	Rated speed rpm Del. quantity	:	410	
Rated speed rpm	: 1625	1	cm3/1000 strokes Tolerance	:	1.5	
Del. quantity cm3/1000 strokes		‡	cm3/1000 strokes Spread	:	1.5	
Tolerance cm3/1000 strokes		<u> </u>	cm3/1000 strokes Check tolerance	:	5.0	
Check tolerance cm3/1000s.	: 2.3	‡	cm3/1000S. Spread	:	1.5	
Shutoff solenoid Volt	: 12	‡	cm3/1000 strokes	:	5.0	
Rated speed rpm	: 2000	‡				
Del. quantity cm3/1000 strokes	: 31.3	‡				
Tolerance cm3/1000 strokes Check tolerance	: 1.0	Ŧ	CHECKING LOAD-DEP START OF DELIVERY		T	
cm3/1000s.	: 2.3	Į	START OF DECIVER!			

DFI	TVFRY	DIFFERENCE	

Rated speed rpm	:	1250
Del. quantity		44.0
cm3/1000 strokes	:	-11.0
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	2.0
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

:	1250
:	-0.4
•	0.1
:	0.1
:	12
	•

DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	5.0
Tolerance		7.0
cm3/1000 strokes Check tolerance	:	3.0
cm3/1000s.	:	3.0
Shutoff solenoid		40
Volt	:	12

PRESSURE DIFFERENCE

Rated speed rpm	:	1250
Supply pomp		
pressure bar	:	-0.4
Tolerance hPa		0.2
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Tolerance mm	:	0.2
Check		
tolerance mm	:	0.3
Shutoff solenoid		
Voit		12

START TRANSITION

Rated speed rpm :	3	1	1	ĺ	
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Del. quantity cm3/1000 strokes Tolerance	:	30.0
cm3/1000 strokes Shutoff solenoid	:	15.0
Volt	:	12
Rated speed rpm	:	210

kateu speed rpm	•	210
Del. quantity cm3/1000 strokes	:	60.0
Tolerance cm3/1000 strokes	:	15.0
Shutoff solenoid Volt	:	12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	Kmm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 5,5
Tolerance	mm	: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm	: +-0,2

MICROSWIT	CH
SET	

mm	:	0,83,0
	:	7,68,4

CONTROL LEVER POSITION SET

Control	leve	er		
position	YA	mm	:	-

Control	Leve	er		
position	YB	mm	:	-

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.07.95 Test oil : ISO 4113

Part no. : 0 460 484 090 Pump designation : VE4/8F2300R317-8

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 724
Power KW : 47.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 4.3 Tolerance mm : 0.2 Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 4.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

0h		1
Shutoff solenoid Volt	: 12	Rated speed rpm : 310
		+
		+ SV travel mm : 1.8
LOAD-DEPENDENT ST	ART OF DELIVERY	+ Tolerance mm : 1.2 + Check
SETTING	ANT OF DECIVERY	tolerance mm : 1.2
		+ Shutoff solenoid
DELIVERY DIFFEREN	ICE	+ Volt : 12
Rated speed rpm	: 1250	KSB/AFB Volt : 12
Del. quantity		+
cm3/1000 strokes	: -8.7	+ Rated speed rpm : 500
Tolerance cm3/1000 strokes	: 1.0	T SV travel mm : 3.1
Shutoff solenoid		+ Tolerance mm : 1.2
Volt	: 12	+ Check
PRESSURE DIFFEREN	ICE	tolerance mm : 1.2 Shutoff solenoid
FRESSORE DIFFEREN		Volt : 12
Rated speed rpm	: 1250	†
Del. quantity cm3/1000 strokes	: -0.2	+ KSB/AFB Volt : 12
Tolerance	0.2	SUPPLY PUMP PRESSURE CHARACTERISTIC
cm3/1000 strokes	: 0.1	†
Shutoff solenoid	: 12	Rated speed rpm : 2000
Volt	: 12	+ Supply pomp + pressure bar : 6.7
TIMING-DEVICE TRA	VEL DIFFERENCE	Tolerance hPa : 0.3
Data dan salam	4250	+ Shutoff solenoid
Rated speed rpm Del. quantity	: 1250	+ Volt : 12
cm3/1000 strokes	: -0.4	Rated speed rpm : 750
Tolerance	2.4	+ Supply pomp
cm3/1000 strokes Shutoff solenoid	: 0.1	+ pressure bar : 3.4 + Tolerance hPa : 0.3
Volt	: 12	Shutoff solenoid
		+ Volt : 12
INJECTION-PUMP TE	ST SPECIFICATIONS	OVERFLOW QUANTITY
1140 [6 1 0 4 6 1 1 6	of breefitentions	TOVERTED W GONTY ITT
TIMING DEVICE CHA	RACTERISTIC	Rated speed rpm : 2250
Rated speed rpm	: 2000	+ Overflow quantity + ccm/10s : 97.2
Nated Speed I pill	. 2000	+ Tolerance
SV travel mm	: 8.0	+ ccm/10s : 41.6
Tolerance mm Check	: 0.4	Check tolerance
tolerance mm	: 0.7	ccm/10s : 41.6
Shutoff solenoid		- Shutoff solenoid
Volt	: 12	+ Volt : 12
Rated speed rpm	: 750	Rated speed rpm : 750
, ,		+ Overflow quantity
SV travel mm	: 2.0 : 0.4	+ ccm/10s : 63.8 + Tolerance
Tolerance mm Check	; U.4	+ ccm/10s : 22.2
tolerance mm	: 0.7	+
Shutoff solenoid	: 12	+ Check tolerance + ccm/10s : 22.2
Volt	. 12	+ ccm/10s : 22.2

Shutoff solenoid Volt	: 12	+ Shutoff solenoid + Volt : 12
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	+ Rated speed rpm : 750 + Del. quantity
Rated speed rpm Del. quantity	: 2450	cm3/1000 strokes : 31.6 Tolerance
cm3/1000 strokes Tolerance	: 26.0	cm3/1000 strokes : 1.5 Check tolerance
cm3/1000 strokes Check tolerance	: 3.0	cm3/1000s. : 2.3 Shutoff solenoid
cm3/1000s. Shutoff solenoid		Volt : 12
Volt	: 12	Rated speed rpm : 1250 Del. quantity
Rated speed rpm Del. quantity	: 2650	+ cm3/1000 strokes : 31.5 + Tolerance
cm3/1000 strokes Check tolerance	: 11.0	cm3/1000 strokes : 0.5 Check tolerance
cm3/1000s. Shutoff solenoid	: 5.0	cm3/1000s. : 2.3 Shutoff solenoid
Volt	: 12	Volt : 12
Rated speed rpm Del. quantity	: 2950	<u> </u>
cm3/1000 strokes Tolerance	: 2.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
cm3/1000 strokes Check tolerance		Rated speed rpm : 410
cm3/1000s. Shutoff solenoid	: 2.5	Del. quantity cm3/1000 strokes : 1.5
Volt	: 12	Tolerance cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity	: 2250	Check tolerance : 1.5
cm3/1000 strokes Tolerance		+ Spread + cm3/1000 strokes : 5.0
cm3/1000 strokes Check tolerance		+ FULL-LOAD STOP CONTROL LEVER
cm3/1000s. Shutoff solenoid	: 2.3	+ Rated speed rpm : 410
Volt	: 12	the Del. quantity to cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity	: 1625	Tolerance : 1.5
cm3/1000 strokes Tolerance		Spread : 5.0
cm3/1000 strokes Check tolerance	: 1.5 : 2.3	Check tolerance cm3/1000s. : 1.5
cm3/1000s. Shutoff solenoid	: 12	Spread cm3/1000 strokes : 5.0
Volt Rated speed rpm	: 2000	<u> </u>
Del. quantity cm3/1000 strokes		1
Tolerance	: 1.0	CHECKING LOAD-DEPENDENT
Check tolerance cm3/1000s.	: 2.3	START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-11.0
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	2.0
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-0.4
Tolerance cm3/1000 strokes	:	0.1
Check tolerance cm3/1000s.	:	0.1
Shutoff solenoid Volt	:	12

DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	5.0
Tolerance cm3/1000 strokes	:	3.0
Check tolerance cm3/1000s.	:	3.0
Shutoff solenoid Volt	:	12

PRESSURE DIFFERENCE

Rated speed rpm	:	1250
Supply pomp		_
pressure bar	:	-0.4
Tolerance hPa	:	0.2
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Tolerance mm	:	1250 0.2
Check tolerance mm	:	0.3
Shutoff solenoid Voit	:	12

START TRANSITION

Rated speed rpm : 310

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	:	30.0 15.0 12	
Rated speed rpm	:	210	
Del. quantity cm3/1000 strokes	:	60.0	

Tolerance cm3/1000 strokes : 15.0 Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 5,5
Tolerance	mm	: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm	: +-0,2

MICROSWITCH SET

mm : 0,8...3,0 : 7,6...8,4

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 16.03.95 : ISO 4113 Test oil : 0 460 484 031 Part no. Pump designation : VE4/8F2100R357 Customer-spec. information Customer : VW : 028.A 1.9L. 45KW Motor TEST BENCH REQUIREMENTS Calibrating-oil return temperature °C 45 Tolerance °C Overflow restriction mm 0.55 : Inlet press. bar : 0.35 Tolerance bar 0.05 Test nozzle holde assembly : 1 688 901 000 Opening pressure 147 bar 3 Tolerance bar : 1 680 750 000 Test lines Outside diameter : 6.00 2.00 x inside diameter: 840 x length mm : REMARKS INJECTION PUMP SETTING VALUES

Rated speed rpm : 1250 Setting mm 3.7 Tolerance mm 0.2 Shutoff solenoid 12 Volt SUPPLY PUMP PRESSURE Rated speed rpm : 1250 Setting hPa 6.0 : Tolerance hPa 0.3 Shutoff solenoid 12 Volt FULL-LOAD DELIV. WITHOUT BOOST PRESSURE Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 36.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12 HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING 550 Rated speed rpm Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 0.5 Shutoff solenoid 12 Volt FULL-LOAD SPEED REGULATION Rated speed rpm : 2400 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid 12 Volt STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 60.0 Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid 12 Volt

TIMING DEVICE TRAVEL

			•	+	SUPPLY PUMP PRES	SURE	CHARACTE	RISTIC
LOAD-DEPENDENT ST SETTING	ART	OF DELIVERY		+	Rated speed rpm Supply pomp	:		
DELIVERY DIFFEREN	ICE		-	‡	pressure bar Tolerance hPa	:	7.4 0.3	
Rated speed rpm	:	1250	-	‡	Shutoff solenoid Volt	:	12	
Del. quantity cm3/1000 strokes Tolerance	:	-7.5	-	Ŧ	Rated speed rpm Supply pomp	:	750	
cm3/1000 strokes Shutoff solenoid	:	1.0	-	I	pressure bar Tolerance hPa	:	4.8 0.3	
Volt	:	12	-	‡	Shutoff solenoid Volt	:	12	
PRESSURE DIFFEREN	CE		-	1	OVERFLOW QUANTITY	·		
Rated speed rpm Del. quantity	:	1250	-	1	Rated speed rpm		1850	
cm3/1000 strokes Tolerance	:	-0.2		1	Overflow quantity ccm/10s	, · :	97.2	
cm3/1000 strokes Shutoff solenoid	:	0.1	-	+	Tolerance ccm/10s	:	41.6	
Volt	:	12	-	‡	Check tolerance			
TIMING-DEVICE TRA			-	‡	ccm/10s Shutoff solenoid	:	55.5	
Rated speed rpm Del. quantity			-	†	Volt	•	12	
cm3/1000 strokes Tolerance			-	‡	Rated speed rpm Overflow quantity		750	
cm3/1000 strokes Shutoff solenoid		0.1	-	†	ccm/10s Tolerance	•	63.8	
Volt	:	12	-	‡	ccm/10s	:	22.2	
INJECTION-PUMP TE	ST S	SPECIFICATION	vs -		Check tolerance ccm/10s Shutoff solenoid	:	34.7	
TIMING DEVICE CHA	RAC1	TERISTIC	-		Volt	:	12	
Rated speed rpm	:	1700	-		DELIVERY AND BREA	KAWA	Y CHARACT	TERISTIC
SV travel mm Tolerance mm	:	4.8 0.4	-	-	Rated speed rpm Del. quantity	:	2400	
Check tolerance mm	:	0.7	-	+	cm3/1000 strokes Tolerance		12.0	
Shutoff solenoid Volt	:	12	-	-	cm3/1000 strokes Check tolerance	:	2.0	
Rated speed rpm	:	750	-		cm3/1000S. Shutoff solenoid	:	4.0	
SV travel mm	:	1.3	1	-	Volt		12	
Tolerance mm Check	:	0.4	1		Rated speed rpm Del. quantity	:	2650	
tolerance mm Shutoff solenoid	:	0.7	1		cm3/1000 strokes Check tolerance	:	3.0	
Volt	:	12	1		cm3/1000S. Shutoff solenoid	:	3.0	
Rated speed rpm	:	750	ŧ	-	Volt	:	12	

			+ Tolerance
Rated speed rpm	:	2250	+ cm3/1000 strokes : 1.5
Del. quantity			+ Check tolerance
cm3/1000 strokes	:	23.0	+ cm3/1000s. : 1.5
Tolerance			+
cm3/1000 strokes	:	5.0	+ FULL-LOAD STOP CONTROL LEVER
Check tolerance			+
cm3/1000S.	:	6.0	+ Rated speed rpm : 425
Shutoff solenoid			+ Del. quantity
Volt	:	12	+ cm3/1000 strokes : 1.5
			+ Tolerance
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity			+ Check tolerance
cm3/1000 strokes	:	33.0	+ cm3/1000s, : 1.5
Tolerance			
cm3/1000 strokes	:	1.0	}
Check tolerance			+
cm3/1000S.	:	2.2	ļ
Shutoff solenoid	•		+ RESIDUAL QUANTITY
Volt	:	12	+
· · · • •	-		Rated speed rpm : 500
Rated speed rpm	:	500	Del. quantity
Del. quantity	•	- 	+ cm3/1000 strokes : 3.5
cm3/1000 strokes	:	32.0	+ Tolerance
Tolerance	-	- - : -	- cm3/1000 strokes : 1.0
cm3/1000 strokes	:	2.5	- Check tolerance
Check tolerance	•		- cm3/1000s. : 2.5
cm3/1000s.	:	5.0	+ Shutoff solenoid
Shutoff solenoid	•	~ · •	+ Volt : 12
Volt	:	12	
	•	· -	1
Rated speed rpm	:	750	
Del. quantity	•		CHECKING LOAD-DEPENDENT
cm3/1000 strokes	:	32.0	+ START OF DELIVERY
Tolerance	•		
cm3/1000 strokes	:	1.5	↓ DELIVERY DIFFERENCE
Check tolerance	•	. • •	
cm3/1000s.	:	3.0	Rated speed rpm : 1250
Shutoff solenoid	•	J.0	Del. quantity
Volt	•	12	- cm3/1000 strokes : -8.0
7-3-6-6	•	-	Tolerance
Rated speed rpm	:	1250	- cm3/1000 strokes : 3.0
Del. quantity	•		Check tolerance
cm3/1000 strokes	•	36.0	cm3/1000s. : 4.0
Tolerance	•	50.0	+ Shutoff solenoid
cm3/1000 strokes	•	0.5	Volt : 12
Check tolerance	•	J. J	1
cm3/1000s.		2.2	TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid	•	L . L	I THINK DEATOR HANGE DIFFERENCE
Volt		12	T Rated speed rpm : 1250
VOLL	•	16	Del. quantity
			+ cm3/1000 strokes : -0.4
			Tolerance
ELECTO CHITAGE			
ELECTR. SHUTOFF	16.6	TOP	Check tolerance
CONTROL LEVER, ID	רב פ	100	
Debad seed see		125	
Rated speed rpm	:	425	+ Shutoff solenoid
	•		
Del. quantity		1 5	+ Volt : 12
		1.5	T VOLT : 12 DELIVERY DIFFERENCE

1250 Rated speed rpm Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. 1.5 Shutoff solenoid 12 Volt

PRESSURE DIFFERENCE

Rated speed rpm 1250 Supply pomp pressure bar -0.7Tolerance hPa 0.2 Shutoff solenoid Volt 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1250 -1.2SV travel mm

0.2 Tolerance mm Check 0.5 tolerance mm Shutoff solenoid 12 Volt

START TRANSITION

380 Rated speed rpm Del. quantity cm3/1000 strokes : 28.0

Tolerance

10.0 cm3/1000 strokes : Shutoff solenoid 12 Volt

180 Rated speed rpm Del. quantity 60.0 cm3/1000 strokes :

Tolerance 25.0 cm3/1000 strokes

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

: 3,3 Dimension K mm Tolerance mm : +-0,1 Dimension KF mm : 5,3 : +-0,2 Tolerance mm Dimension MS mm : 1,3 Tolerance mm : +-0,2

CONTROL LEVER POSITION

SET

Control lever

: 20,0..22,0 position YA mm

Control lever

: 60,5..71,5 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 06.06.95

Test oil

: ISO 4113

Part no.

: 0 460 484 102

Pump designation: VE4/8F2100R357-1

Customer-spec. information

Customer

: VW

Motor Power KW : 1.9L T4 SD

45.0

45

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C

Tolerance °C

Overflow

0.55 restriction mm

0.35 Inlet press. bar : 0.05

Tolerance bar

Test nozzle holde

: 1 688 901 000 assembly

Opening pressure

147 bar

Tolerance bar

: 1 680 750 000 Test lines

6.00 Outside diameter :

2.00 x inside diameter :

840 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

3.7 Setting mm : Tolerance mm 0.2

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

1250 Rated speed rpm :

Setting hPa 6.0 Tolerance hPa 0.3

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 36.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 550

Del. quantity

cm3/1000 strokes : 2.5

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

2400 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes 2.0

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid			+			
Volt	:	12	<u>†</u>	Rated speed rpm	:	750
			Ŧ	SUPPLY PUMP PRESS	URE	CHARACTERISTIC
LOAD-DEPENDENT ST SETTING	rart	OF DELIVERY	‡	Rated speed rpm Supply pomp	:	1850
NEI THENY NAMEDON	105		+	pressure bar	:	7.4
DELIVERY DIFFEREN	NCE		Ī	Tolerance hPa Shutoff solenoid	:	0.3
Rated speed rpm Del. quantity	:	1250	‡	Volt	:	12
cm3/1000 strokes Tolerance	:	- 7.5	‡	Rated speed rpm Supply pomp	:	750
cm3/1000 strokes	:	1.0	+	pressure bar	:	4.8
Shutoff solenoid Volt	:	12	Ī	Tolerance hPa Shutoff solenoid	•	0.3
			+	Volt	:	12
PRESSURE DIFFEREN	ICE		Ī	OVERFLOW QUANTITY		
Rated speed rpm	:	1250	+			4.0.00
Del. quantity cm3/1000 strokes	:	-0.2	İ	Rated speed rpm Overflow quantity	:	1850
Tolerance		-	+	ccm/10s	:	97.2
cm3/1000 strokes Shutoff solenoid	•	0.1	†	Tolerance ccm/10s		41.6
Volt	:	12	Į	CCIII/ TOS	:	41.0
TIMING-DEVICE TRA	VFL	DIFFERENCE	1	Check tolerance ccm/10s	:	55.5
			+	Shutoff solenoid	•	
Rated speed rpm Del. quantity	:	1250	1	Volt	:	12
cm3/1000 strokes	:	-0.4	+	Rated speed rpm	:	750
Tolerance cm3/1000 strokes		0.1	+	Overflow quantity ccm/10s		63.8
Shutoff solenoid	:	0.1	Ţ	Tolerance	•	05.0
Volt	:	12	+	ccm/10s	:	22.2
			I	Check tolerance		
INJECTION-PUMP TE	ST	SPECIFICATIONS	+	ccm/10s	:	34.7
TIMING DEVICE CHA	RAC	TERISTIC	Ī	Shutoff solenoid Volt	:	12
			+			
Rated speed rpm	:	1700	‡	DELIVERY AND BREAK	KAWA	AY CHARACTERISTIC
SV travel mm	:	4.8	+	Rated speed rpm	:	2400
Tolerance mm Check	:	0.4	İ	Del. quantity cm3/1000 strokes		12.0
tolerance mm	:	0.7	+	Tolerance	•	
Shutoff solenoid Volt		12	†	cm3/1000 strokes Check tolerance	:	2.0
VOCC	•	12	Į	cm3/1000s.	:	4.0
Rated speed rpm	:	750	+	Shutoff solenoid Volt		12
SV travel mm	:	1.3	Ī	VOLL	:	12
Tolerance mm	:	0.4	+	Rated speed rpm	:	2650
Check tolerance mm	•	0.7	‡	Del. quantity cm3/1000 strokes	:	3.0
Shutoff solenoid	•		+	Check tolerance		
Volt	:	12	+	cm3/1000s.	:	3.0

Shutoff solenoid			l Dol guantity
Volt	:	12	+ Del. quantity + cm3/1000 strokes : 1.5 + Tolerance
Rated speed rpm Del. quantity	:	2250	cm3/1000 strokes : 1.5 Check tolerance
cm3/1000 strokes Tolerance	:	23.0	cm3/1000s. : 1.5
cm3/1000 strokes Check tolerance	:	5.0	cm3/1000 strokes : 5.0
cm3/1000s. Shutoff solenoid	:	6.0	FULL-LOAD STOP CONTROL LEVER
Volt	:	12	Rated speed rpm : 425 Del. quantity
Rated speed rpm Del. quantity	:	1850	cm3/1000 strokes : 1.5
cm3/1000 strokes Tolerance	:	33.0	cm3/1000 strokes : 1.5 Spread
cm3/1000 strokes Check tolerance	:	1.0	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. Shutoff solenoid	:	2.2	cm3/1000s. : 1.5
Volt	:	12	cm3/1000 strokes : 5.0
Rated speed rpm Del. quantity	:	500	<u> </u>
cm3/1000 strokes Tolerance	:	32.0	RESIDUAL QUANTITY
cm3/1000 strokes Check tolerance	:	2.5	Rated speed rpm : 500
cm3/1000s. Shutoff solenoid	:	5.0	Del. quantity - cm3/1000 strokes : 3.5
Volt	:	12	Tolerance cm3/1000 strokes : 1.0
Rated speed rpm Del. quantity	:	750	Check tolerance cm3/1000s. : 2.5
cm3/1000 strokes Tolerance	:	32.0	Shutoff solenoid Volt : 12
cm3/1000 strokes Check tolerance	:	1.5	
cm3/1000s. Shutoff solenoid	:	3.0	CHECKING LOAD-DEPENDENT
Volt	:	12	START OF DELIVERY
Rated speed rpm Del. quantity	:	1250	DELIVERY DIFFERENCE
cm3/1000 strokes Tolerance	:	36.0	Rated speed rpm : 1250 Del. quantity
cm3/1000 strokes Check tolerance	:	0.5	cm3/1000 strokes : -8.0 Tolerance
cm3/1000s. Shutoff solenoid	:	2.2	cm3/1000 strokes : 3.0 Check tolerance
Volt	:	12	cm3/1000s. : 4.0 Shutoff solenoid
ELECTR. SHUTOFF CONTROL LEVER, ID	_E S	STOP	TIMING-DEVICE TRAVEL DIFFERENCE
Rated speed rpm		425	Rated speed rpm : 1250 Del. quantity
The second second			+ cm3/1000 strokes : -0.4

Tolerance cm3/1000 strokes	:	0.1
Check tolerance		
cm3/1000s. Shutoff solenoid	:	0.1
Volt	:	12
DELIVERY DIFFEREN	ICE	
Rated speed rpm Del. quantity	:	1250
cm3/1000 strokes Tolerance	:	1.5
cm3/1000 strokes	:	1.5
Check tolerance cm3/1000s.	:	1.5
Shutoff solenoid Volt	:	12
PRESSURE DIFFEREN	CE	
Rated speed rpm Supply pomp	:	1250
pressure bar	:	-0.7
Tolerance hPa Shutoff solenoid	:	0.2
Volt	:	12
TIMING-DEVICE TRA	VFI	DIFFERENCE
TIME DEVICE THA	• • •	727 . 2.1.2.1.02
Rated speed rpm	:	1250
Rated speed rpm SV travel mm	:	1250
Rated speed rpm SV travel mm Tolerance mm Check	-	1250 -1.2 0.2
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	:	1250
Rated speed rpm SV travel mm Tolerance mm Check	:	1250 -1.2 0.2
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	:	1250 -1.2 0.2 0.5
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	:	1250 -1.2 0.2 0.5
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm	:	1250 -1.2 0.2 0.5
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes	:	1250 -1.2 0.2 0.5 12
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	1250 -1.2 0.2 0.5 12
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: : : : : : : : : : : : : : : : : : : :	1250 -1.2 0.2 0.5 12 380 28.0
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		1250 -1.2 0.2 0.5 12 380 28.0 10.0 12 180 60.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,3
Tolerance mm : +-0,2
Dimension MS mm : 1,3
Tolerance mm : +-0,2

CONTROL LEVER POSITION SET

Control lever

position YA mm : 20,0..22,0

Control lever

position YB mm : 60,5..71,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.06.95 Edition : ISO 4113 Test oil

: 0 460 426 167 Part no. Pump designation: VE6/12F1000R369-1

Customer-spec. information

: CDC Customer

: 6BT- 5.9 IND. Motor

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

0.55 restriction mm

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 bar 3 Tolerance bar

: 1 680 750 000 Test lines

Outside diameter : 6.00

x inside diemeter : 2.00 840 x length mm

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,5 Tolerance mm : +-0,02

Outlet : D

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 750

3.7 Setting mm : Tolerance mm 0.2 :

Shutoff solenoid

24 Volt

SUPPLY PUMP PRESSURE

750 Rated speed rpm

Setting hPa 3.9 : Tolerance hPa 0.3

Shutoff solenoid

Volt 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

900 Rated speed rpm

Del. quantity cm3/1000 strokes : 74.9

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Shutoff solenoid

24 Volt

IDLE SETTING

Rated speed rpm 500

Del. quantity cm3/1000 strokes : 7.0

Tolerance

cm3/1000 strokes 3.0 Shutoff solenoid

Volt

24 Spread

cm3/1000 strokes :

5.5 Check tolerance 7.0 cm3/1000s.

FULL-LOAD SPEED REGULATION

		1
Rated speed rpm Del. quantity	: 1045	OVERFLOW QUANTITY
cm3/1000 strokes Tolerance	: 63.0	Rated speed rpm : 1000 Overflow quantity
cm3/1000 strokes Shutoff solenoid		ccm/10s : 97.2 Tolerance
Volt	: 24	ccm/10s : 41.6
STARTING FUEL DEL	IVERY	Check tolerance : 41.6
Rated speed rpm Del. quantity	: 100	Shutoff solenoid Volt : 24
cm3/1000 strokes Tolerance	: 100.0	Rated speed rpm : 500
cm3/1000 strokes Shutoff solenoid	: 30.0	Overflow quantity ccm/10s : 63.8
Volt	: 24	Tolerance : 22.2
		+ Check tolerance
		- ccm/10s : 22.2 - Shutoff solenoid
INJECTION-PUMP TE	ST SPECIFICATIONS	+ Volt : 24
TIMING DEVICE CHA		+ DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm		Rated speed rpm : 1045 Del. quantity
SV travel mm Tolerance mm	: 5.2 : 0.4	cm3/1000 strokes : 63.0 Tolerance
Check tolerance mm	: 0.7	cm3/1000 strokes : 3.0 check tolerance
Shutoff solenoid Volt	: 24	+ cm3/1000s. : 6.0 + Shutoff solenoid
Rated speed rpm	: 500	+ Volt : 24
SV travel mm	: 1.8	+ Rated speed rpm : 1100 + Del. quantity
Tolerance mm Check	: 0.4	+ cm3/1000 strokes : 35.0 + Check tolerance + cm3/1000s. : 10.0
tolerance mm Shutoff solenoid	: 24	+ cm3/1000S. : 10.0 + Shutoff solenoid + Volt : 24
Volt	. 24 URE CHARACTERISTIC	Rated speed rpm : 1170
Rated speed rpm	: 1000	Del. quantity cm3/1000 strokes : 1.5
Supply pomp pressure bar	: 4.9	Tolerance cm3/1000 strokes : 1.5
Tolerance hPa Shutoff solenoid	: 0.3	Check tolerance cm3/1000s. : 1.5
Volt	: 24	Shutoff solenoid Volt : 24
Rated speed rpm Supply pomp	: 500	Rated speed rpm : 1000
pressure bar Tolerance hPa	: 2.9 : 0.3	Del. quantity cm3/1000 strokes : 73.5
Shutoff solenoid Volt	: 24	Tolerance cm3/1000 strokes : 1.5
	- - 1	1 2

01		t			
Check tolerance	7.0	†	Tolerance		4 =
cm3/1000s.	: 3.0	†	cm3/1000 strokes	:	1.5
Shutoff solenoid	<u>.</u> .	+	Check tolerance		
Volt	: 24	+	cm3/1000s.	:	1.5
		+	Spread		
Rated speed rpm	: 750	+	cm3/1000 strokes	:	5.0
Del. quantity		1			
cm3/1000 strokes	: 75.9	1	FULL-LOAD STOP CO	NTROL	LEVER
Tolerance	. (3.)	<u>1</u>	TOLL LOAD DIG! CO	MINOL	. LEVEN
cm3/1000 strokes	: 1.5		Pated speed nom	:	500
Check tolerance	. 1.5	T	Rated speed rpm	•	200
	. 7.5	†	Del. quantity		4 5
cm3/1000s.	: 3.5	t	cm3/1000 strokes	:	1.5
Shutoff solenoid		+	Tolerance		
Volt	: 24	+	cm3/1000 strokes	:	1.5
		+	Spread		
Rated speed rpm	: 500	+	cm3/1000 strokes	:	5.0
Del. quantity		1	Check tolerance		
cm3/1000 strokes	: 62.7	1	cm3/1000s.	•	1.5
Tolerance		1	Spread	•	1.5
* - · · · · ·	: 4.0	Ţ	cm3/1000 strokes		5.0
cm3/1000 strokes	, 4.0	Ť	CHIS/ TODO STROKES	•	ى. ر
Check tolerance		†			
cm3/1000s.	: 6.0	†	IDLE DELIVERY		
Shutoff solenoid		+			
Volt	: 24	+	Rated speed rpm	:	540
		+	Del. quantity		
Rated speed rpm	: 900	+	cm3/1000 strokes	:	1.5
Del. quantity		1	Tolerance	-	
cm3/1000 strokes	: 74.9	1	cm3/1000 strokes	•	1.5
Tolerance	, , , ,	1	Check tolerance	•	1.5
cm3/1000 strokes	: 0.5	T	cm3/1000s.	_	1.5
	: 0.5	T		•	1.3
Check tolerance		†	Shutoff solenoid		0.4
cm3/1000s.	: 3.0	+	Volt	:	24
Shutoff solenoid		+			
Volt	: 24	+			
		+			
		 +			
MECHANICAL SHUTOF	F	1			
	•	1			
Rated speed rpm	: 1000	1	START TRANSITION		
Del. quantity	. 1000	T	START TRAINSTITON		
	. 15	T	Dated aread non		250
cm3/1000 strokes	: 1.5	Ť	Rated speed rpm	:	250
Tolerance		†	Del. quantity		/F 0
cm3/1000 strokes	: 1.5	+	cm3/1000 strokes	:	45.0
Spread		+	Tolerance		
cm3/1000 strokes	: 5.0	+	cm3/1000 strokes	:	15.0
Check tolerance		+	Shutoff solenoid		
cm3/1000s.	: 1.5	+	Volt	:	24
Spread		1			
cm3/1000 strokes	: 5.Ō	1			
Shutoff solenoid		1	Rated speed rpm	•	130
	: 24	T		•	150
Volt	: 24	†	Del. quantity		110.0
		†	cm3/1000 strokes	:	110.0
			Tolerance		70.0
ELECTR. SHUTOFF		+	cm3/1000 strokes	:	30.0
CONTROL LEVER, ID	LE STOP	+	Shutoff solenoid		
		+	Volt	:	24
Rated speed rpm	: 500	 			
Del. quantity	-	1			
cm3/1000 strokes	: 1.5	1	ASSEMBLY AND ADJUS	STMENT	T DIMENSIONS
J 1555 561 511 511 50		1			
		•			

Dimension KF mm : 5,2
Tolerance mm : +0,2
Dimension MS mm : 1,0
Tolerance mm : +0,02

CONTROL LEVER POSITION SET

Control lever

position YA mm : 34,8..38,8

Control lever

position YB mm : 35,7..41,3

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.09.95 Test oil : ISO 4113

Part no. : 0 460 416 067 Pump designation : VE6/11F1150R394

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8065.25.220
Power KW : 78.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 020

Opening pressure

bar : 172 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Setting mm : 2.4
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Setting hPa : 4.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm	:	1000
Aneroid pressure		1000
Del. quantity	•	1000
cm3/1000 strokes	:	84.0
Tolerance		
cm3/1000 strokes	:	0.5
Spread		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000S.	:	4.0
Shutoff solenoid		
Volt	•	12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

500

Del. quantity cm3/1000 strokes : 74.5 Tolerance cm3/1000 strokes : 0.5 Shutoff solenoid Volt : 12 Check tolerance cm3/1000s. : 4.0

Rated speed rpm :

IDLE SETTING

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread		+ Supply pomp			
cm3/1000 strokes Check tolerance	: 3.		:	6.4 0.3	
cm3/1000s.	: 4.		oid .	12	
		+ voc:	•		
FULL-LOAD SPEED F	REGULATION	+ Rated speed r		550	
Rated speed rpm Pressure hPa	: 1260 : 100	→ hPa	:	1000	
Del. quantity		pressure bar	:	3.9	
cm3/1000 strokes Tolerance	: 50.	Tolerance hPa + Shutoff solend	i id	0.3	
cm3/1000 strokes	: 3.		:	12	
Shutoff solenoid Volt	: 1	2 TOVERFLOW QUANT	TITY		
STARTING FUEL DEL	IVERY	Rated speed r	m:	500	
		+ Overflow quant		4 7 0	
Rated speed rpm Del. quantity	: 100	+ ccm/10s + Tolerance	•	63.8	
cm3/1000 strokes Tolerance	: 110.	ccm/10s	:	22.2	
cm3/1000 strokes	: 25.		e		
Shutoff solenoid Volt	: 1	+ ccm/10s + Shutoff solence	: bid	22.2	
Vocc	• '	+ Volt	:	12	
		Rated speed r		1150	
	·	Aneroid pressu hPa	ire :	1000	
INJECTION-PUMP TE	ST SPECIFI	CATIONS + Overflow quant	-		
TIMING DEVICE CHA	RACTERISTI		•	97.2	
Rated speed rpm	: 1000	+ ccm/10s	:	41.6	
Aneroid pressure		Check tolerand	e	14.7	
hPa Tolerance mm	: 100		id:	41.6	
Check	: 0.4	Volt	:	12	
tolerance mm Shutoff solenoid		→ DELIVERY AND E	REAKAWA	Y CHARACT	ERISTIC
Volt	: 1	? + Rated speed rp	m:	1260	
Rated speed rpm	: 550	+ Aneroid pressu			
Aneroid pressure hPa	: 100		:	1000	
SV travel mm	: 1.	cm3/1000 strok Tolerance	es :	50.0	
Tolerance mm	: 0.4	→ cm3/1000 strok		3.0	
Check tolerance mm	: 0.9		:	6.0	
Shutoff solenoid Volt	: 12	+ Shutoff soleno + Volt	id :	12	
SUPPLY PUMP PRESSI		+	m:	1280	
	DIVE CHARAC	+ Aneroid pressu			
Rated speed rpm		- C -		7000	
	: 1150	+ hPa + Del. quantity	•	1000	
Aneroid pressure hPa	: 1150 : 1000	+ Del. quantity	es :	34.5	

Check tolerance cm3/1000s. Shutoff solenoid	:	5.0	+	- - -	Del. quantity cm3/1000 strokes Tolerance		86.5	
Volt	:	12	+	_	cm3/1000 strokes Check tolerance	:	2.0	
Rated speed rpm Aneroid pressure	:	1350	1	-	cm3/1000s. Shutoff solenoid	:	3.5	
hPa Del. quantity	:	1000		-	Volt	:	12	
cm3/1000 strokes Tolerance	:	1.5	1	-	Rated speed rpm Aneroid pressure	:	1000	
cm3/1000 strokes Check tolerance	:	1.5		-	hPa Del. quantity	:	1000	
cm3/1000s. Shutoff solenoid	:	1.5		-	cm3/1000 strokes Tolerance	:	84.0	
Volt	:	12		-	cm3/1000 strokes Check tolerance	:	0.5	
Rated speed rpm Aneroid pressure	:	500	1	-	cm3/1000s. Shutoff solenoid	:	3.5	
hPa	:	350		-	Volt	:	12	
LDA/ HBA stroke mm	:	4.7	1	-				
Del. quantity cm3/1000 strokes		79.5		-	ELECTR. SHUTOFF CONTROL LEVER, ID	lF :	STOP	
Tolerance cm3/1000 strokes		0.5	1	-	Rated speed rpm		325	
Check tolerance cm3/1000s.	•	4.0	1		Del. quantity cm3/1000 strokes		1.5	
Shutoff solenoid Volt	:	12	1	-	Tolerance cm3/1000 strokes		1.5	
Rated speed rpm	:		1		Check tolerance cm3/1000s.		1.5	
Aneroid pressure	•	1000	1		Spread cm3/1000 strokes	•	5.0	
Del. quantity cm3/1000 strokes	•	81.5	1		FULL-LOAD STOP CO			
Tolerance cm3/1000 strokes		1.5	1		Rated speed rpm	:	325	
Check tolerance cm3/1000s.	:	3.5	1	•	Del. quantity cm3/1000 strokes	-	1.5	
Shutoff solenoid Volt	•	12	1	•	Tolerance cm3/1000 strokes		1.5	
Rated speed rpm	:	650	1		Spread cm3/1000 strokes		5.0	
Aneroid pressure	•	1000	Ŧ		Check tolerance cm3/1000s.	•	1.5	
Del. quantity cm3/1000 strokes	•	89.0	Ŧ		Spread cm3/1000 strokes	•	5.0	
Tolerance cm3/1000 strokes		2.0	-		IDLE DELIVERY	•	٥.٠	
Check tolerance		3.5	Ŧ		Rated speed rpm		420	
cm3/1000s. Shutoff solenoid	:		Ŧ		Del. quantity cm3/1000 strokes	:	1.5	
Volt	:	12 500	-		Tolerance cm3/1000 strokes		1.5	
Rated speed rpm Aneroid pressure	:	1000	+		Check tolerance cm3/1000s.		1.5	
hPa	:	1000	‡		CIIIS/ TUUUS.	:	1.3	

Shutoff solenoid

12 Volt

START TRANSITION

250 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 70.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt 12

150 Rated speed rpm

Del. quantity

cm3/1000 strokes : 110.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm

: 3,3 Dimension K mm : +-0,1 Tolerance mm : 1,1 Dimension MS mm

: +-0,2 Tolerance mm

CONTROL LEVER POSITION

SET

Control lever

: 34,9..36,9 position YA mm

Control lever

: 48,2..53,8 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 13.11.95

Test oil

: ISO 4113

Part no.

: 0 460 426 179

Pump designation : VE6/12F1250R406

Customer-spec. information

Customer

: PERKINS

Motor

: Q20 Phaser T6.60

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C

Tolerance °C

Overflow

restriction mm

0.55

Inlet press. bar :

Tolerance bar

0.350.05

Test nozzle holde

assembly

: 1 688 901 027

Opening pressure

bar

250

Tolerance bar

Test lines

: 1 680 750 073

Outside diameter :

6.00

x inside diameter :

2.00

x length mm :

450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,25 : +-0,02 Tolerance mm

Check

tolerance mm

: +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1000

Aneroid pressure

hPa 1500 :

1.6 Setting mm 0.2

Tolerance mm

1000 Rated speed rpm

SUPPLY PUMP PRESSURE

Aneroid pressure

1500 hPa

Setting hPa 6.2

Tolerance hPa 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 700

Aneroid pressure

1500 hPa

Del. quantity

84.5

cm3/1000 strokes : Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 5.0

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 64.5

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s.5.0

IDLE SETTING

325 Rated speed rpm

Del. quantity

cm3/1000 strokes :

10.0

Tolerance

cm3/1000 strokes : 2.0

Spread

5.0 cm3/1000 strokes :

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Check tolerance			+	Supply pomp		
cm3/1000s.	:	5 .0	+	pressure bar	:	5.0
			+	Tolerance hPa	:	ე.3
			+			
FULL-LOAD SPEED F	REGU	LATION	+	OVERFLOW QUANTITY		
			+			
Rated speed rpm	:	1400	+	Rated speed rpm		500
Pressure hPa	:	1500	+	Overflow quantity		/ - -
Del. quantity		,,	†	ccm/10s	:	63.8
cm3/1000 strokes	;	40.0	†	Tolerance		22.2
Tolerance	_	7.0	†	ccm/10s	:	22.2
cm3/1000 strokes	:	3.0	Ť	Check tolerance		
STARTING FUEL DEL	TVE	DY	I	ccm/10s		22.2
STARTING FUEL DEL	TAC	I, I	I	CCIII/ TUS	•	22.2
Rated speed rpm	:	100	I	Rated speed rpm	:	1200
Del. quantity	•	100	1	Aneroid pressure	•	1200
cm3/1000 strokes	:	130.0	. ↓	hPa	:	1500
Tolerance	·		1	Overflow quantity	-	
cm3/1000 strokes	:	30.0	1	ccm/10s	:	97.2
			+	Tolerance		
			+	ccm/10s	:	41.6
			+			
			+	Check tolerance		
			 +	ccm/10s	:	41.6
INJECTION-PUMP TE	ST	SPECIFICATIONS	†	A		
	D 4 0	TC010T10	†	DELIVERY AND BREAK	<aw <="" td=""><td>AY CHARACTERISTIC</td></aw>	AY CHARACTERISTIC
TIMING DEVICE CHA	IRAU	IEKT211C	†	Dated annual num		1/00
Detail aread ass		1100	†	Rated speed rpm	:	1400
Rated speed rpm Aneroid pressure	:	1100	1	Aneroid pressure hPa		1500
hPa		1500	I	Del. quantity	•	1,000
нга	•	1500	I	cm3/1000 strokes	:	40.0
SV travel mm	•	2.3	1	Tolerance	•	10.0
Tolerance mm	:	0.4	1	cm3/1000 strokes	:	3.0
Check	•		<u> </u>	Check tolerance		
tolerance mm	:	0.7	1	cm3/1000s.	:	6.0
	-		ļ.			
Rated speed rpm	:	900	+	Rated speed rpm	:	1480
Aneroid pressure			+	Aneroid pressure		
hPa	:	1500	+	hPa	:	1500
			+	Del. quantity		.
SV travel mm	:	0.8	+	cm3/1000 strokes	:	3.5
Tolerance mm	:	0.4	†	Check tolerance		7 5
Check		0.7	†	cm3/1000s.	:	3.5
tolerance mm	:	0.7	†	Rated speed rpm	•	1350
SUPPLY PUMP PRESS	LIDE	CHADACTEDISTIC	Ī	Aneroid pressure	•	1300
SUFFET FUMF PRESS	ORE	CHARACTERISTIC	I	hPa		1500
Rated speed rpm		1200	I	Del. quantity	•	1300
Aneroid pressure	•	1200	1	cm3/1000 strokes	•	65.0
hPa	:	1500	1	Tolerance	•	
Supply pomp	٠		1	cm3/1000 strokes	:	8.0
pressure bar	:	7.2	+	Check tolerance		
Tolerance hPa		0.3	+	cm3/1000s.	:	10.0
			+			
Rated speed rpm	:	700	+	Rated speed rpm	:	700
Aneroid pressure			+	Aneroid pressure		
hPa	:	1500	+	hPa	:	700
			+			

Del. quantity cm3/1000 strokes Tolerance	:	79.0	‡	IDLE DELIVERY	
cm3/1000 strokes	:	0.5	Ŧ	Rated speed rpm Del. quantity	: 420
Check tolerance cm3/1000s.	:	3.5	Ŧ	cm3/1000 strokes Tolerance	: 1.5
Rated speed rpm Aneroid pressure	:	1200	Ŧ	cm3/1000 strokes Check tolerance	: 1.5
hPa Del. quantity	:	1500	1	cm3/1000s.	: 1.5
cm3/1000 strokes Tolerance	:	89.5	1	Rated speed rpm Del. quantity	: 350
cm3/1000 strokes Check tolerance	:	1.5	‡	cm3/1000 strokes Tolerance	: 5.0
cm3/1000s.	:	3.5	‡	cm3/1000 strokes Check tolerance	: 3.0
Rated speed rpm Del. quantity	:	700	‡	cm3/1000s.	: 5.0
cm3/1000 strokes Tolerance		60.5	‡		
cm3/1000 strokes Check tolerance	:	2.5	‡		
cm3/1000s.	:	4.0	‡	START TRANSITION	
Rated speed rpm Aneroid pressure	:	1000	‡	Rated speed rpm	: 230
hPa Del. quantity	:	1500	‡	Del. quantity cm3/1000 strokes	: 70.0
cm3/1000 strokes Tolerance		83.5	‡	Tolerance cm3/1000 strokes	: 20.0
cm3/1000 strokes Check tolerance		1.5 3.5	‡	Dated aread non	: 130
cm3/1000s.	:	700	Ŧ	Rated speed rpm Del. quantity cm3/1000 strokes	
Rated speed rpm Aneroid pressure hPa	•	1500	Ŧ	Tolerance cm3/1000 strokes	
Del. quantity cm3/1000 strokes	•	84.5			
Tolerance cm3/1000 strokes			‡	ASSEMBLY AND ADJU	STMENT DIMENSIONS
Check tolerance cm3/1000s.	:	3.5	+	Dimension KF mm Tolerance mm	: +-0,02
MEGUANIZOA CIUTOS			 ‡	MS1 dimension mm Tolerance mm	: 2,0 : +0,15/-0,1
MECHANICAL SHUTOF	r		Ţ		
Rated speed rpm Aneroid pressure	:	1200	‡	CONTROL LEVER POS	ITION
hPa Del. quantity	:	1500	‡	SET	
cm3/1000 strokes Tolerance		1.5	+	Control lever	. 77 6 70 0
cm3/1000 strokes Check tolerance		1.5	‡	position YA mm	: 37,239,2
cm3/1000s.	:	1.5	‡	Control lever position YB mm	: 52,460,6

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05,04,95 Test oil : ISO 4113

: 0 460 424 075 Part no. Pump designation : VE4/12F1350R407

Customer-spec, information : IVECO-FIAT Customer

Motor : 8040,25,4000 TC

Power KW 85.0 :

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 bar Tolerance bar

: 1 680 750 073 Test lines

Outside diameter :

x inside diameter: 2.00 450 x length mm

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,3 Tolerance mm : +--0,04

Check

tolerance mm : +-0,06

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1000 Rated speed rpm

Aneroid pressure

1000 hPa

1.6 Setting mm Tolerance mm 0.2

Shutoff solenoid

24 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1000

Aneroid pressure

hPa 1000

Setting hPa 6.3 Tolerance hPa 0.3

Shutoff solenoid

Volt 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 700 Aneroid pressure

1000

Del. quantity cm3/1000 strokes : 79.5

Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s. 5.0

Shutoff solenoid

24 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 600

Del. quantity

cm3/1000 strokes : 46.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt

24

Check tolerance

cm3/1000s.5.0

IDLE SETTING

			+ Shutoff solenoid
Rated speed rpm	:	350	+ Volt : 24
Del. quantity		45.5	†
cm3/1000 strokes	:	15.0	+ SUPPLY PUMP PRESSURE CHARACTERISTIC
Tolerance		2.0	7750
cm3/1000 strokes Shutoff solenoid	:	2.0	Rated speed rpm : 1350
Volt	٠	24	+ Aneroid pressure + hPa : 1000
Spread	•	64	Supply pomp
cm3/1000 strokes	:	3.5	pressure bar : 8.0
Check tolerance	-		+ Tolerance hPa : 0.3
cm3/1000s.	:	5.0	+ Shutoff solenoid
			+ Volt : 24
			+
FULL-LOAD SPEED F	REGUL	_ATION	Rated speed rpm : 600
D. A. al. and and annual		4505	+ Aneroid pressure
Rated speed rpm	:	1525 1 000	+ hPa : 1000
Pressure hPa Del. quantity	•	1000	+ Supply pomp + pressure bar : 4.0
cm3/1000 strokes	•	33.0	Tolerance hPa : 0.3
Tolerance	•	55.0	+ Shutoff solenoid
cm3/1000 strokes	:	3.0	+ Volt : 24
Shutoff solenoid	•		+
Volt	:	24	OVERFLOW QUANTITY
			+
STARTING FUEL DEL	.IVEF	RY	+ Rated speed rpm : 1350
		400	+ Aneroid pressure
Rated speed rpm	:	100	+ hPa : 1000
Del. quantity	_	05.0	+ Overflow quantity + ccm/10s : 97.2
cm3/1000 strokes	:	95.0	ccm/10s : 97.2 Tolerance
Tolerance cm3/1000 strokes		30.0	+ ccm/10s : 41.6
Shutoff solenoid	•	50.0	1 (0)
Volt	:	24	- Check tolerance
			+ ccm/10s : 41.6
			+ Shutoff solenoid
			+ Volt : 24
			+
TALLECTY ALL DUMB TO	· • • •		Rated speed rpm : 600
INJECTION-PUMP TE	51 5	PECIFICATIO	
TIMING DEVICE CHA	DACT	EDISTIC	+ hPa : 1000 + Overflow quantity
THITIAG NEATOR CHW	NAC I	CVI01IC	+ ccm/10s : 63.8
Rated speed rpm	:	1100	+ Tolerance
Aneroid pressure	-		+ ccm/10s : 22.2
hPa	:	1000	+
Tolerance mm	:	0.4	+ Check tolerance
Check			+ ccm/10s : 22.2
tolerance mm	:	0.9	+ Shutoff solenoid
Shutoff solenoid		2/	+ Volt : 24
Volt	•	24	DELIVERY AND BREAKAWAY CHARACTERISTIC
Rated speed rpm	:	1350	T DELIVER! AND DREADAWA! CHARACTERISTIC
Aneroid pressure	•	1000	Rated speed rpm : 1525
hPa	:	1000	Aneroid pressure
			+ hPa : 1000
SV travel mm	:	4.1	† Del. quantity
Tolerance mm	:	0.4	+ cm3/1000 strokes : 33.0
Check			† Tolerance
tolerance mm		0.9	+ cm3/1000 strokes : 3.0

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Check tolerance cm3/1000s.	:	6.0	‡	Del. quantity cm3/1000 strokes	:	74.0	
Shutoff solenoid Volt	:	24	‡	Tolerance cm3/1000 strokes	:	2.0	
Rated speed rpm Aneroid pressure	:	1475	<u> </u>	Check tolerance cm3/1000S. Shutoff solenoid	:	3.5	
hPa Del. quantity	:	1900	<u> </u>	Volt	:	24	
cm3/1000 strokes Tolerance	:	50.0	‡	Rated speed rpm Aneroid pressure	:	600	
cm3/1000 strokes Check tolerance	:	8.0	‡	hPa Del. quantity	:	1000	
cm3/1000S. Shutoff solenoid	:	10.0	‡	cm3/1000 strokes Tolerance		84.5	
Volt	•	24	‡	cm3/1000 strokes Check tolerance	:	2.0	
Rated speed rpm Aneroid pressure hPa	:	1610 1000	Ī	cm3/1000S. Shutoff solenoid Volt	:	3. <i>5</i> 24	
Del. quantity cm3/1000 strokes	•	1.5	Ī	Rated speed rpm	:	700	
Tolerance cm3/1000 strokes	:	1.5	‡	Aneroid pressure	:	1000	
Check tolerance cm3/1000s.	:	1.5	+	Del. quantity cm3/1000 strokes	:	79.5	
Shutoff solenoid Volt	:	24	‡	Tolerance cm3/1000 strokes	:	0.5	
Rated speed rpm	:	600	‡	Check tolerance cm3/1000S. Shutoff solenoid	:	3,5	
Aneroid pressure hPa	:	375	Ŧ	Volt	:	24	
LDA/ HBA stroke mm	:	7.5	+				
Del. quantity cm3/1000 strokes	-	64.5	Ī	ELECTR. SHUTOFF CONTROL LEVER, ID	IF ST	ΓΟΡ	
Tolerance		0.5	+	Rated speed rpm		350	
Check tolerance cm3/1000s.	:	4.0	Ŧ	Del. quantity cm3/1000 strokes	:	1.5	
Shutoff solenoid Volt	•	24	1	Tolerance cm3/1000 strokes		1.5	
Rated speed rpm	:	1350	‡	Check tolerance cm3/1000s.	:	1.5	
Aneroid pressure hPa	:	1000	‡	Spread cm3/1000 strokes	:	5.0	
Del. quantity cm3/1000 strokes	:	71.0	‡	FULL-LOAD STOP CO	NTROL	LEVER	
Tolerance cm3/1000 strokes Check tolerance			†	Rated speed rpm	:	350	
	:	1.5	I		•		
cm3/1000S.	:	1.5 3.5	-	Del. quantity cm3/1000 strokes		1.5	
	:	3.5 24	T + + +	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Spread	:	1.5 1.5	
cm3/1000S. Shutoff solenoid	:	3.5	† † † †	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	1.5	

Spread cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm 475 Del. quantity cm3/1000 strokes : 1.5

Tolerance

cm3/1000 strokes : Check tolerance

cm3/1000s. Shutoff solenoid

24 Volt

1.5

1.5

55.0

10.0

START TRANSITION

250 Rated speed rpm

Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 strokes :

Shutoff solenoid

24 Volt

130 Rated speed rpm

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : 30.0

Shutoff solenoid

24 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

7.5 HBA stroke mm

: 5,4 Dimension KF mm

: +-0,2

Tolerance mm MS1 dimension mm

Tolerance mm

: 1,46 : +0,15/-0,1

KSB travel mm

: 10,0

CONTROL LEVER POSITION

SET

Control Lever

position YA mm : 37,9..39,9

Control Lever

position YB mm

: 42,0..50,0

End of test-specification sheet

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Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.04.95 : ISO 4113 Test oil

Part no. : 0 460 424 076 Pump designation: VE4/12F1350R407-1

Customer-spec, information : IVECO-FIAT Customer

Motor : 8040.45.4000 TCA

Power KW 102.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm 0.75

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 027 assembly

Opening pressure

250 bar Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter: 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1000 Rated speed rpm

Aneroid pressure

1000 hPa

Setting mm 1.6 Tolerance mm 0.2

Shutoff solenoid Volt

SUPPLY PUMP PRESSURE

1000 Rated speed rpm

Aneroid pressure

hPa 1000

Setting hPa 6.5 Tolerance hPa 0.3

Shutoff solenoid

Volt 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

24

Rated speed rpm 700 Aneroid pressure

1000 Del. quantity

cm3/1000 strokes : 72.5

Tolerance

cm3/1000 strokes : 0.5

Spread

3.5 cm3/1000 strokes :

Check tolerance

cm3/1000s. 5.0

Shutoff solenoid Volt

24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

600 Rated speed rpm

Del. quantity

cm3/1000 strokes : 43.0

Tolerance

cm3/1000 strokes 0.5

Shutoff solenoid

Volt 24

Check tolerance

cm3/1000s. 5.0

IDLE SETTING

Rated speed rpm 350

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

24 Volt

Spread			+ Su	ipply pomp			
cm3/1000 strokes	:	3.5	+ pr	essure bar	:	7.9	
Check tolerance				lerance hPa	:	0.3	
cm3/1000S.	:	5.0		nutoff solenoid		27	
			† vo	olt	:	24	
בווון בו מאת בחברת נ	DECH.	I ATTON	† "	ted enced non		600	
FULL-LOAD SPEED F	100	LATION		nted speed rpm meroid pressure	:	000	
Rated speed rpm	•	1525	I he		•	1000	
Pressure hPa	:	1000		ipply pomp	•	.000	
Del. quantity	•	, 555		essure bar	:	4.8	
cm3/1000 strokes	:	26.0		lerance hPa	:	0.3	
Tolerance			+ Sh	utoff solenoid			
cm3/1000 strokes	:	3.0	+ Vo	olt	:	24	
Shutoff solenoid			†				
Volt	:	24	† ov	ERFLOW QUANTITY			
OTABETANO FUEL NEL	T. 15	5 14	† 5.	A	_	4750	
STARTING FUEL DEL	TAF:	RT		ted speed rpm eroid pressure	:	1350	
Rated speed rpm		100	+ AII			1000	
Del. quantity	•	100		erflow quantity	•	1000	
cm3/1000 strokes	•	95.0		m/10s	:	138.8	
Tolerance	•			lerance	•	,,,,,,	
cm3/1000 strokes	:	30.0		m/10s	:	41.6	
Shutoff solenoid			+				
Volt	:	24		eck tolerance			
				m/10s	:	41.6	
			•	utoff solenoid			
			+ Vo	lt	:	24	
			l l				
			+ 55	*	_	400	
TALLECT TOAL DIME TO	CT (CDECTET CATTONS		ted speed rpm	:	600	
INJECTION-PUMP TE	ST	SPECIFICATIONS	+ An	eroid pressure	:		
			+ An + hP	eroid pressure	:	600 1000	
INJECTION—PUMP TE			+ An + hP + 0v	eroid pressure a erflow quantity	:	1000	
TIMING DEVICE CHA		TERISTIC	+ An + hP + 0v + cc	eroid pressure	:		
TIMING DEVICE CHA	RAC		+ An + hP + Ov + cc + To	eroid pressure a erflow quantity m/10s	:	1000	
TIMING DEVICE CHA	RAC	TERISTIC	+ An + hP + Ov + cc + To	eroid pressure a erflow quantity m/10s lerance	:	1000 97.2	
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa Tolerance mm	RAC	TERISTIC 1100	+ An + hP + Ov + cci + To - cci	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance	:	1000 97.2 22.2	
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa Tolerance mm Check	RAC	TERISTIC 1100 1000 0.4	+ An + hP + Ov + cci + To + cci	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s	:	1000 97.2	
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm	RAC	TERISTIC 1100 1000	An hP OV CCI TO Ch	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid	:	1000 97.2 22.2 22.2	
TIMING DEVICE CHARATED SPEED TO PROBLEM TOLERANCE MAN Check tolerance man Shutoff solenoid	RAC	1100 1000 1000 0.4 0.9	+ An + hP + Ov + cci + To + cci	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid	:	1000 97.2 22.2	
TIMING DEVICE CHA Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm	RAC	TERISTIC 1100 1000 0.4	An hP Ov cci	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid	: : : : : : : : : : : : : : : : : : : :	1000 97.2 22.2 22.2 24	DISTIC
TIMING DEVICE CHARATED SPEED TO PROBLEM TOLERANCE MAN Shutoff solenoid Volt	RAC	1100 1000 0.4 0.9 24	An hP Ov cci To cci Chi	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid	: : : : : : : : : : : : : : : : : : : :	1000 97.2 22.2 22.2 24	RISTIC
TIMING DEVICE CHARATED SPEED FOR Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt	RAC	1100 1000 1000 0.4 0.9	An hP OV cci To cci Shi	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK	: : : : : : : : : : : : : : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE	RISTIC
TIMING DEVICE CHARATED Speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure	RAC	1100 1000 0.4 0.9 24 1350	An hP OV cci To Ch CShi Vo	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK	: : : : : : : : : : : : : : : : : : : :	1000 97.2 22.2 22.2 24	RISTIC
TIMING DEVICE CHARATED SPEED FOR Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt	RAC	1100 1000 0.4 0.9 24	An hP OV cci To Ch CShi Vo	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure	: : : : : : : : : : : : : : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE	RISTIC
TIMING DEVICE CHARATED Speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure	RAC	1100 1000 0.4 0.9 24 1350	An hP	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure	: : : : : : : : : : : : : : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525	RISTIC
TIMING DEVICE CHARATED Speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa	RAC	1100 1000 0.4 0.9 24 1350 1000	An An An An An An An An An An An An An A	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a	: : : : : : : : : : : : : : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525	RISTIC
TIMING DEVICE CHARATED SPEED TO PERSON TO PERS	RAC	1000 1000 0.4 0.9 24 1350 1000 4.1 0.4	An An An An An An An An An An An An An A	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance	: : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0	RISTIC
TIMING DEVICE CHARATED SPEED TO PRESSURE MAN Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm	RAC	1000 1000 0.4 0.9 24 1350 1000 4.1	An An An An An An An An An An An An An A	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000 strokes	: : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000	RISTIC
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Check tolerance mm	RAC	1000 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9	An An An An An An An An An An An An An A	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000 strokes eck tolerance	: : : : : (AWA :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0 3.0	RISTIC
TIMING DEVICE CHARATED SPEED TO PRESSURE MAN Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm	RAC	1000 1000 0.4 0.9 24 1350 1000 4.1 0.4	An An An An An An An An An An An An An A	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000 strokes eck tolerance 3/1000s.	: : : : : (AWA :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0	RISTIC
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9	An An An An An An An An An An An An An A	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000 strokes eck tolerance 3/1000s. utoff solenoid	: : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0 3.0 6.0	RISTIC
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Check tolerance mm	: : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9	An An An An An An An An An An An An An A	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000 strokes eck tolerance 3/1000s. utoff solenoid	: : : : : (AWA :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0 3.0	RISTIC
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS	RACC:::::::::::::::::::::::::::::::::::	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9 24 CHARACTERISTI	An hPe cm To cm chi chi shi vo	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000 strokes eck tolerance 3/1000s. utoff solenoid lt	: : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0 3.0 6.0 24	RISTIC
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm	: : : : :	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9	An hP occident of the control of the	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000 strokes eck tolerance 3/1000s. utoff solenoid lt ted speed rpm	: : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0 3.0 6.0	RISTIC
Rated speed rpm Aneroid pressure hPa Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm Aneroid pressure hPa SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS	RACC:::::::::::::::::::::::::::::::::::	1100 1000 0.4 0.9 24 1350 1000 4.1 0.4 0.9 24 CHARACTERISTI	An hP occident of the control of the	eroid pressure a erflow quantity m/10s lerance m/10s eck tolerance m/10s utoff solenoid lt LIVERY AND BREAK ted speed rpm eroid pressure a l. quantity 3/1000 strokes lerance 3/1000s. utoff solenoid lt ted speed rpm eroid pressure	: : : : : : : :	1000 97.2 22.2 22.2 24 Y CHARACTE 1525 1000 26.0 3.0 6.0 24	RISTIC

Del. quantity		F7 6	+	Rated speed rpm		600	
cm3/1000 strokes Tolerance	:	53.0	‡	Aneroid pressure hPa	:	1000	
cm3/1000 strokes Check tolerance	:	8.0	†	Del. quantity cm3/1000 strokes		76.5	
cm3/1000s.	:	10.0	Į	Tolerance			
Shutoff solenoid Volt		24	t	cm3/1000 strokes Check tolerance	:	2.0	
	•		Ŧ	cm3/1000s.	:	3.5	
Rated speed rpm Aneroid pressure	:	1600	<u> </u>	Shutoff solenoid Volt		24	
hPa	:	1000	+		•		
Del. quantity cm3/1000 strokes	:	1.5	‡	Rated speed rpm Aneroid pressure	:	700	
Tolerance			+	hPa	:	1000	
cm3/1000 strokes Check tolerance	:	1.5	‡	Del. quantity cm3/1000 strokes	:	72.5	
cm3/1000s.	:	1.5	+	Tolerance			
Shutoff solenoid Volt	:	24	Į	cm3/1000 strokes Check tolerance	:	0.5	
		600	+	cm3/1000s. Shutoff solenoid	:	3.5	
Rated speed rpm Aneroid pressure	•		Į	Volt	:	24	
hPa	:	510	<u>†</u>				
LDA/			-				
HBA stroke mm Del. quantity	:	6.9	‡	ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	TOP	
cm3/1000 strokes	:	62.5	+				
Tolerance cm3/1000 strokes	:	0.5	‡	Rated speed rpm Del. quantity	:	350	
Check tolerance			+	cm3/1000 strokes	:	1.5	
cm3/1000s. Shutoff solenoid	•	4.0	Ī	Tolerance cm3/1000 strokes	:	1.5	
Volt	:	24	†	Check tolerance cm3/1000s.		1.5	
Rated speed rpm	:	1350	Ŧ	Spread	•		
Aneroid pressure hPa	•	1000	<u> </u>	cm3/1000 strokes	:	5.0	
Del. quantity	•		+	FULL-LOAD STOP CO	NTRO	L LEVER	
cm3/1000 strokes Tolerance	:	65.0	‡	Rated speed rpm	:	350	
cm3/1000 strokes	:	1.5	+	Del. quantity cm3/1000 strokes		1.5	
Check tolerance cm3/1000s.	:	3.5	Į	Tolerance			
Shutoff solenoid Volt	:	24	İ	cm3/1000 strokes Spread	:	1.5	
			+	cm3/1000 strokes	:	5.0	
Rated speed rpm Aneroid pressure	:	1200	‡	Check tolerance cm3/1000s.	:	1.5	
hPa Del. quantity	:	1000	+	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes	:	65.5	Į		•	٠.٥	
Tolerance cm3/1000 strokes	:	2.0	‡	IDLE DELIVERY			
Check tolerance			+	Rated speed rpm	:	475	
cm3/1000S. Shutoff solenoid	:	3.5	‡	Del. quantity cm3/1000 strokes	:	1.5	
Volt	:	24	†	Tolerance cm3/1000 strokes		1.5	
			7	CHIST TOOU SCHOKES	•	۱.,۱	

Check tolerance cm3/1000s. : 1.5 Shutoff solenoid

Volt : 24

START TRANSITION

Rated speed rpm : 250

Del. quantity cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 24

Rated speed rpm : 130

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : 30.0

Shutoff solenoid

Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 6.9

Dimension K mm : 3,6
Tolerance mm : +-0,1
Dimension KF mm : 6,4
Tolerance mm : +-0,2
MS1 dimension mm : 1,75

Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 39,0..47,0

		+				
BOSCH INJ. PUMP T	TEST SPECIFICATIONS	+	Rated speed rpm		1000	
Note nomento		+	Aneroid pressure		1000	
Note remarks		I	hPa	:	1000	
	Info for test and	+	Setting mm		1.6	
adjustment instru		+	Tolerance mm		0.2	
See microcard(s)	W400/	†	Shutoff solenoid	_	24	
Edition	• 05 04 95	İ	Volt	:	24	
Test oil	: ISO 4113	1	SUPPLY PUMP PRES	SURE		
		+			4000	
	: 0 460 424 075A	†	Rated speed rpm		1000	
Pump designation	: VE4/12F1350R407A	Ī	Aneroid pressure hPa	:	1000	
		- I	111 9	•	1000	
Customer-spec. in	formation	+	Setting hPa Tolerance hPa	:	6.3	
Customer	: IVECO-FIAT	+	Tolerance hPa	:	0.3	
Motor	: 8040.25x.4000	+	Shutoff solenoid			
		. †	Volt	:	24	
TEST BENCH REQUIR	EMENTS	- Ŧ	FULL-LOAD DELIVE	RY WI	TH BOOST	PRESSURE
Calibrating-oil		Ī	Rated speed rpm	:	700	
return		1	Aneroid pressure			
temperature *C	: 45	+	hPa	:	1000	
Tolerance *C	: 1	+	Del. quantity			
		+	cm3/1000 strokes	:	70.0	
Overflow	. 0.55	†	Tolerance		0.5	
restriction mm	: 0.55	1	cm3/1000 strokes Spread	:	0.5	
		I	cm3/1000 strokes	•	3.5	
Inlet press. bar	: 0.35	1	Check tolerance	•	0.5	
Tolerance bar		+	cm3/1000s.	:	5.0	
		+	Shutoff solenoid			
		+	Volt	•	24	
Test nozzle holde		†	FULL LOAD DELTY	117 T/4	OUT BOOK	DDECCUD
assembly	: ! 600 901 027	Ī	FULL-LOAD DELIV.	MTIL	001 60051	PRESSURI
Opening pressure		1	Rated speed rpm	:	600	
bar	: 250	+	Del. quantity			
Tolerance bar	: 3	+	cm3/1000 strokes	:	46.0	
		+	Tolerance			
	. 4 (00 750 077	†	cm3/1000 strokes	:	0.5	
Test lines	: 1 680 750 073	†	Shutoff solenoid Volt	•	24	
Outside diameter	: 6.00	I	Check tolerance	•	£*	
COSDING GIGHESE	. 0.00	1	cm3/1000s.	:	5.0	
x inside diameter	: 2.00	+				
x length mm	: 450	+	IDLE SETTING			
		†	Roted anged		350	
REMARKS		Ī	Rated speed rpm Del. quantity	:	<i>33</i> 0	
KEMAKKO		I	cm3/1000 strokes	:	15.0	
		1	Tolerance	•	12.0	
		+	cm3/1000 strokes	:	2.0	
		- 🗼	Shutoff solenoid			
INJECTION PUMP SE	TTING VALUES	+	Volt	:	24	
		+	Spread	_	7 -	
TIMING DEVICE TRA	VEL	+	cm3/1000 strokes	:	3.5	

Check tolerance			+	Tolerance hPa	:	0.3	
cm3/1000s.	:	5.0	+	Shutoff solenoid		27	
			1	Volt	:	24	
FULL-LOAD SPEED F	REGULA	ATION	+	Rated speed rpm	:	600	
			+	Aneroid pressure			
Rated speed rpm Pressure hPa	:	1525 1000	†	hPa Supply popp	:	1000	
Del. quantity	•	1000	Ī	Supply pomp pressure bar	•	4.0	
cm3/1000 strokes	:	33.0	1	Tolerance hPa	:	0.3	
Tolerance			+	Shutoff solenoid			
cm3/1000 strokes	:	3.0	†	Volt	:	24	
Shutoff solenoid Volt	•	24	Ī	OVERFLOW QUANTITY			
VOEC	•	C 4	1	OVENTEON GOARTETT			
STARTING FUEL DEL	IVERY	•	+	Rated speed rpm	:	1350	
Datad award awa		100	†	Aneroid pressure hPa		1000	
Rated speed rpm Del. quantity	•	100	Ī	nra Overflow quantity	•	1000	
cm3/1000 strokes	:	95.0	1	ccm/10s	:	97.2	
Tolerance			+	Tolerance			
cm3/1000 strokes	:	30.0	+	ccm/10s	:	41.6	
Shutoff solenoid Volt		24	1	Check tolerance			
VOCC	•	24	I	ccm/10s	:	41.6	
			+	Shutoff solenoid	·		
			+	Volt	:	24	
			†	Dated aread are		600	
INJECTION-PUMP TE	ST SP	PECTETCATIONS	I	Rated speed rpm Aneroid pressure	:	000	
			+	hPa	:	1000	
TIMING DEVICE CHA	RACTE	RISTIC	+	Overflow quantity			
Data dama adama		1100	†	ccm/10s Tolerance	:	63.8	
Rated speed rpm Aneroid pressure	•	1100	I	ccm/10s		22.2	
hPa	:	1000	 	00	•		
Tolerance mm	:	0.4	+	Check tolerance			
Check	_	0.0	†	ccm/10s	:	22.2	
tolerance mm Shutoff solenoid	:	0.9	Ī	Shutoff solenoid Volt		24	
Volt	:	24	Ţ	VOCC	•	L-7	
			+	DELIVERY AND BREAK	CAWAY	CHARAC	TERISTIC
Rated speed rpm	:	1350	+	Data di anna di	_	1505	
Aneroid pressure hPa	•	1000	1	Rated speed rpm Aneroid pressure	:	1525	
+1F a	•	1000	Į	hPa	:	1000	
SV travel mm	:	4.1	+	Del. quantity	•		
Tolerance mm	:	0.4	+	cm3/1000 strokes	:	33.0	
Check		0.9	†	Tolerance cm3/1000 strokes	•	3.0	
tolerance mm Shutoff solenoid	•	0.7	I	Check tolerance	•	ں.ر	
Volt	:	24	+	cm3/1000S.	:	6.0	
			+	Shutoff solenoid		•	
SUPPLY PUMP PRESS	URE C	HARACTERISTIC	†	Volt	:	24	
Rated speed rpm	:	1350	I	Rated speed rpm	:	1475	
Aneroid pressure	-		+	Aneroid pressure	-		
hPa	:	1000	+	hPa	:	1000	
Supply pomp		9 A	†	Del. quantity		50 O	
pressure bar	:	8.0	+	cm3/1000 strokes	:	50.0	

Tolerance cm3/1000 strokes	:	4.0	‡	Aneroid pressure hPa	:	1000
Check tolerance cm3/1000s.	:	10.0	‡	Del. quantity cm3/1000 strokes	:	75.5
Shutoff solenoid Volt	:	24	‡	Tolerance cm3/1000 strokes	:	2.0
Rated speed rpm Aneroid pressure	:	1610	‡	Check tolerance cm3/1000s. Shutoff solenoid	:	3.5
hPa Del. quantity	:	1000	Ī	Volt	:	24
cm3/1000 strokes Tolerance	:	1.5	1	Rated speed rpm Aneroid pressure		700
cm3/1000 strokes Check tolerance	:	1.5	+	hPa Del. quantity	:	1000
cm3/1000s. Shutoff solenoid	:	1.5	+	cm3/1000 strokes Tolerance	:	70.0
Volt	:	24	‡	cm3/1000 strokes Check tolerance	:	0.5
Rated speed rpm Aneroid pressure	:	600	‡	cm3/1000S. Shutoff solenoid	:	3.5
hPa	:	375	‡	Volt	•	24
LDA/			†			
HBA stroke mm	:	6.0	†	ELECTR CULTOFF		
Del. quantity cm3/1000 strokes Tolerance	:	64.5	1	ELECTR. SHUTOFF CONTROL LEVER, II	DLE ST	OP
cm3/1000 strokes Check tolerance	:	0.5	1	Rated speed rpm Del. quantity	:	350
cm3/1000s. Shutoff solenoid	:	4.0	+	cm3/1000 strokes Tolerance	:	1.5
Volt	:	24	+	cm3/1000 strokes Check tolerance	:	1.5
Rated speed rpm Aneroid pressure	:	1350	‡	cm3/1000s. Spread	:	1.5
hPa Del. quantity	:	1000	‡	cm3/1000 strokes	:	5.0
cm3/1000 strokes Tolerance	:	62.0	+	FULL-LOAD STOP CO	NTROL	
cm3/1000 strokes Check tolerance	:	1.5	‡	Rated speed rpm Del. quantity	:	350
cm3/1000S. Shutoff solenoid	:	3.5	‡	cm3/1000 strokes Tolerance		1.5
Volt	:	24	‡	cm3/1000 strokes Spread		1.5
Rated speed rpm Aneroid pressure	:	1200	‡	cm3/1000 strokes Check tolerance	:	5.0
hPa Del. quantity	•	1000	7	cm3/1000s. Spread	:	1.5 5.0
cm3/1000 strokes Tolerance cm3/1000 strokes		65.0 2.0	Ŧ	cm3/1000 strokes IDLE DELIVERY	•	٠,٠
Check tolerance cm3/1000s.	•	3.5	Ŧ	Rated speed rpm	:	475
Shutoff solenoid	•	J.J	1	Del. quantity	•	.,,
Volt	:	24	‡	cm3/1000 strokes Tolerance		1.5
Rated speed rpm	:	600	‡	cm3/1000 strokes	:	1.5

Check tolerance 1.5 cm3/1000s. Shutoff solenoid Volt 24 START TRANSITION Rated speed rpm 250 Del. quantity 55.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : 10.0 Shutoff solenoid Volt 24 130 Rated speed rpm Del. quantity cm3/1000 strokes : 95.0 Tolerance 30.0 cm3/1000 strokes : Shutoff solenoid 24 Volt ASSEMBLY AND ADJUSTMENT DIMENSIONS LDA/ HBA stroke mm 6.0 : 3,6 Dimension K mm : +-01 Tolerance mm Dimension KF mm : 6,4 : +-0,2 Tolerance mm MS1 dimension mm : 1,75 : +0,15/-0,1 Tolerance mm CONTROL LEVER POSITION SET Control lever position YA mm : 37,9..39,9 Control lever : 42,0..50,0 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 26.07.94 Test oil : ISO 4113

Part no. : 0 460 494 271 Pump designation : VE4/9F2200R412

Customer-spec. information

Customer : NISSAN-MISA Motor : LD 20 II-E (PF)

Power KW : 46.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm; : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0 Tolerance mm : +-0,02

Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 3.5 Tolerance mm : 0.2

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200

Setting hPa : 5.4 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2200

Del. quantity

cm3/1000 strokes : 33.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

K16

Rated speed rpm : 2600	† Shutoff solenoid
Del. quantity	+ Volt : 12
cm3/1000 strokes : 15.0	† 1/2D /45D . W. h
Tolerance cm3/1000 strokes : 3.0	+ KSB/AFB Volt : 12
cm3/1000 strokes : 3.0 Shutoff solenoid	T
Volt : 12	INJECTION—PUMP TEST SPECIFICATIONS
. ,2	11000011014 1011 1201 01 2011 10111010
KSB/AFB Volt : 12	→ TIMING DEVICE CHARACTERISTIC
	+
	+ Rated speed rpm : 1800
SET GRADUATED STARTING DELIVERY	
CONTROL LEVER, IDLE STOP	+ SV travel mm : 6.4 + Tolerance mm : 0.4
Rated speed rpm : 100	+ Tolerance mm : 0.4 + Check
Del. quantity	tolerance mm : 0.7
cm3/1000 strokes : 50.0	Shutoff solenoid
Tolerance	+ Volt : 12
cm3/1000 strokes : 2.0	}
Shutoff solenoid	+ KSB/AFB Volt : 12
Volt : 12	†
1/05 (A = 0 1/4 b) A 2	+ Rated speed rpm : 900
KSB/AFB Volt : 12	T SV travel mm : 1.9
	+ SV travel mm : 1.9 + Tolerance mm : 0.4
LOAD-DEPENDENT START OF DELIVERY	+ Check
SETTING	tolerance mm : 0.7
	+ Shutoff solenoid
DELIVERY DIFFERENCE	+ Volt : 12
	+
Rated speed rpm : 900	+ KSB/AFB Volt : 12
Del. quantity	2200
cm3/1000 strokes : -9.0	+ Rated speed rpm : 2200
Tolerance cm3/1000 strokes : 1.0	T SV travel mm : 8.1
Shutoff solenoid	Tolerance mm : 0.4
Volt : 12	Check
	+ tolerance mm : 0.5
KSB/AFB Volt : 12	+ Shutoff solenoid
	+ Volt : 12
PRESSURE DIFFERENCE	+
	Volt : 12 KSB/AFB Volt : 12
Rated speed rpm : 900	KSB/AFB Volt : 12
Rated speed rpm : 900 Del. quantity	+
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 900	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 Rated speed rpm : 900
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.8 Tolerance	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 Rated speed rpm : 900 Supply pomp pressure bar : 4.5 Tolerance hPa : 0.3
Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.2 Tolerance cm3/1000 strokes : 0.1 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 900 Del. quantity cm3/1000 strokes : -0.8	KSB/AFB Volt : 12 SUPPLY PUMP PRESSURE CHARACTERISTIC Rated speed rpm : 1800 Supply pomp pressure bar : 7.1 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12 KSB/AFB Volt : 12 Rated speed rpm : 900 Supply pomp pressure bar : 4.5

KSB/AFB Volt	:	12		+	Check tolerance cm3/1000s.	:	5.5
Rated speed rpm	:	2200		‡	Shutoff solenoid Volt	:	12
bressnre par Subbly bowb	:	8.2		+	KSB/AFB Volt	:	12
Tolerance hPa Shutoff solenoid	:	0.3		+	Rated speed rpm	:	2950
Volt	:	12		+	Del. quantity cm3/1000 strokes	:	2.5
KSB/AFB Volt	:	12		‡	Tolerance cm3/1000 strokes	:	2.5
OVERFLOW QUANTITY				‡	Check tolerance cm3/1000S.	:	2.5
Rated speed rpm Overflow quantity	:	2200		†	Shutoff solenoid Volt	:	12
ccm/10s Tolerance	:	97.2		‡	KSB/AFB Volt	:	12
ccm/10s	:	41.6		+	Rated speed rpm	:	900
Check tolerance ccm/10s	:	41.6		‡	Del. quantity cm3/1000 strokes	:	30.4
Shutoff solenoid Volt	:	12		+	Tolerance cm3/1000 strokes	:	1.5
KSB/AFB Volt	:	12		‡	Check tolerance cm3/1000s.	:	2.5
Rated speed rpm	:	600		†	Shutoff solenoid Volt	:	12
Overflow quantity ccm/10s	:	63.8		+	KSB/AFB Volt	:	12
Tolerance ccm/10s	:	22.2		+	Rated speed rpm	:	1200
Check tolerance				+	Del. quantity cm3/1000 strokes	:	32.5
ccm/10s Shutoff solenoid	:	22.2		‡	Tolerance cm3/1000 strokes	:	1.5
Volt	:	12		+	Check tolerance cm3/1000s.	:	2.5
KSB/AFB Volt	:	12		‡	Shutoff solenoid Volt	:	12
DELIVERY AND BREAK	KAWA		ERISTIC	‡	KSB/AFB Volt	:	12
Rated speed rpm Del. quantity		_		+	Rated speed rpm	:	1800
cm3/1000 strokes Tolerance	:	15.0		+	Del. quantity cm3/1000 strokes	:	32.6
cm3/1000 strokes Check tolerance	:	3.0		†	Tolerance cm3/1000 strokes	:	1.0
cm3/1000S. Shutoff solenoid	:	4.5		+	Check tolerance cm3/1000S.	:	2.5
Volt	:	12		+	Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12		+	KSB/AFB Volt	:	12
Rated speed rpm Del. quantity	:	2350		+	Rated speed rpm	:	600
cm3/1000 strokes Tolerance		30.0		†	Del. quantity cm3/1000 strokes	:	31.1
cm3/1000 strokes	:	4.0		‡	Tolerance cm3/1000 strokes	:	1.5

Charle dalarman		1	Company	
Check tolerance cm3/1000s.	: 2.	. T	Spread	. 50
	: 2.	7 †	cm3/1000 strokes	: 5.0
Shutoff solenoid	. 4	, †	Check tolerance	4.5
Volt	: 7	2	cm3/1000s.	: 1.5
K00 4450 W 14		, †	Spread	5.0
KSB/AFB Volt	:	2 +	cm3/1000 strokes	: 5.0
5 • • • • • •	2200	†	100/150 11 11	40
Rated speed rpm	: 2200	†	KSB/AFB Volt	: 12
Del. quantity	~	, †		
cm3/1000 strokes	: 33.	7 †		
Tolerance		- †		
cm3/1000 strokes	: 0.	° †		
Check tolerance	. 4	, †		
cm3/1000s.	: 1.	7	011501/51/0 1 0 1 0 1 0 1 0 1	
Shutoff solenoid		, †	CHECKING LOAD-DEP	
Volt	: 1	- †	START OF DELIVERY	
			NEL THEORY ATTECCES	NCE.
MECHANICAL CHITCE			DELIVERY DIFFEREN	/UE
MECHANICAL SHUTOF	r	†	Datad amand am	- 000
Dahad apard au-	. 2200	†	Rated speed rpm	: 900
Rated speed rpm	: 2200	†	Del. quantity	-10 4
Del. quantity	: 1.	- †	cm3/1000 strokes	: -10.6
cm3/1000 strokes Tolerance	: 1.	' †	Tolerance cm3/1000 strokes	. 20
	: 1.	†		: 2.0
cm3/1000 strokes Spread	: (.	†	Check tolerance cm3/1000s.	: 2.0
cm3/1000 strokes	: 5.	Ţ	Shutoff solenoid	: 2.0
	: 5.	,	Volt	: 12
Check tolerance cm3/1000s.	: 1.	· Ť	VOLE	: 12
Spread		' T	KSB/AFB Volt	: 12
cm3/1000 strokes	: 5.	$_{1}$	KSB/AIB VOCE	. 12
Shutoff solenoid		1	TIMING-DEVICE TRA	VEL DIFFEDENCE
Volt	: 1	\mathbf{I}	TITITE DEVICE TRA	VEE DITTERENCE
VOCC	• '	·	Rated speed rpm	: 900
KSB/AFB Volt	: 1	,	Del. quantity	. ,09
NOD! AID TOLE		· .	cm3/1000 strokes	: -0.8
		\	Tolerance	. 3.3
ELECTR. SHUTOFF		1	cm3/1000 strokes	: 0.1
CONTROL LEVER, ID	LE STOP	1	Check tolerance	
		1	cm3/1000s.	: 0.1
Rated speed rpm	: 350	\	Shutoff solenoid	•
Del. quantity		1	Volt	: 12
cm3/1000 strokes	: 1.	; 		
Tolerance		+	KSB/AFB Volt	: 12
cm3/1000 strokes	: 1.	; 		
Check tolerance		+	DELIVERY DIFFEREN	CE
cm3/1000s.	: 1.	; 		
Spread		+	Rated speed rpm	: 900
cm3/1000 strokes	: 5.0	+	Del. quantity	
		+	cm3/1000 strokes	: 5.0
KSB/AFB Volt	: 17	!	Tolerance	_
		+	cm3/1000 strokes	: 3.0
FULL-LOAD STOP CO	NTROL LEVE	;	Check tolerance	
		+	cm3/1000s.	: 3.0
Rated speed rpm	: 350	+	Shutoff solenoid	
Del. quantity		. t	Volt	: 12
cm3/1000 strokes	: 1.5	+		4.5
Tolerance		. +	KSB/AFB Volt	: 12
cm3/1000 strokes	: 1.9	†	TTMTN0 500000	um arremente
		+	TIMING-DEVICE TRA	VEL DIFFERENCE

900 Rated speed rpm -0.8SV travel mm : Tolerance mm 0.5 Check 0.5 tolerance mm Shutoff solenoid Volt 12 KSB/AFB Volt 12 START TRANSITION Rated speed rpm 340 Del. quantity cm3/1000 strokes : 35.0

KSB/AFB Volt : 12

Rated speed rpm : 210

Del. quantity

10.0

12

cm3/1000 strokes : 55.0 Tolerance cm3/1000 strokes : 10.0

Shutoff solenoid

Tolerance

Volt

cm3/1000 strokes

Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +-0,1 : 5,8 Dimension KF mm : +-0,2 Tolerance mm Dimension MS mm : 1,2 : +-0,2 Tolerance mm : 6,0 KSB travel mm : 3,7 TLA travel mm

CONTROL LEVER POSITION SET

Control lever

position YA mm : 30,8..34,8

Control lever

position YB mm : 67,4..78,6

Note remarks

Refer to Service Info for test and edjustment instructions.
See microcard(s) W400/...

Edition : 25.04.94 Test oil : ISO 4113

Part no. : 0 460 494 299 Pump designation : VE4/9F2350R452

Customer—spec. information
Customer : RENAULT
Motor : J8S - 784

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm : 2.8 Tolerance mm : 0.2

Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Setting hPa : 4.5 Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes : 36.7

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 6.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500 Del. quantity

cm3/1000 strokes :

Tolerance

cm3/1000 strokes : 3.0

23.0

Shutoff solenoid

Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

Volt : 12

LOAD-DEPENDENT START OF DELIVERY

SETTING

DELIVERY DIFFERENCE

Date of annual annual		1400	L Data damaged many 200
Rated speed rpm	:	1125	+ Rated speed rpm : 800
Del. quantity		-11.0	+ Supply pomp + pressure bar : 3.4
cm3/1000 strokes	:	-11.0	
Tolerance		4.0	+ Tolerance hPa : 0.3
cm3/1000 strokes		1.0	+ Shutoff solenoid
Shutoff solenoid		40	† Volt : 12
Volt	:	12	†
			+ OVERFLOW QUANTITY
PRESSURE DIFFEREN	1CE		†
		4.405	+ Rated speed rpm : 2250
Rated speed rpm	:	1125	+ Overflow quantity
Del. quantity			- ccm/10s : 97.2
cm3/1000 strokes	:	-0.2	+ Tolerance
Tolerance			+ ccm/10s : 41.6
cm3/1000 strokes		0.1	†
Shutoff solenoid		40	+ Check tolerance
Volt	:	12	+ ccm/10s : 41.6
			+ Shutoff solenoid
TIMING-DEVICE TRA	IVEL	DIFFERENCE	† Volt : 12
			†
Rated speed rpm	:	1125	+ Rated speed rpm : 800
Del. quantity			+ Overflow quantity
cm3/1000 strokes	:	-0.6	+ ccm/10s : 63.8
Tolerance			+ Tolerance
cm3/1000 strokes	:	0.1	+ ccm/10s : 22.2
Shutoff solenoid			†
Volt	:	12	+ Check tolerance
			+ ccm/10s : 22.2
***************************************			+ Shutoff solenoid
INJECTION-PUMP TE	ST	SPECIFICATIONS	† Volt : 12
			+
INJECTION-PUMP TE			+ Volt : 12 + DELIVERY AND BREAKAWAY CHARACTERISTIC
TIMING DEVICE CHA	RAC	TERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC
	RAC		DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500
TIMING DEVICE CHA	RAC	TERISTIC 2000	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity
TIMING DEVICE CHA Rated speed rpm SV travel mm	RAC	TERISTIC 2000 7.5	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0
TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm	RAC	TERISTIC 2000	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance
TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check	RAC	7.5 0.4	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0
TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	RAC	TERISTIC 2000 7.5	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance
TIMING DEVICE CHARATED SPEED TO THE TOTAL TO THE TOTAL TO THE TOTAL TOTA	RAC	7.5 0.4 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0
TIMING DEVICE CHA Rated speed rpm SV travel mm Tolerance mm Check tolerance mm	RAC	7.5 0.4	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid
TIMING DEVICE CHARACTER Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : :	7.5 0.4 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0
TIMING DEVICE CHARATED SPEED TO THE TOTAL TO THE TOTAL TO THE TOTAL TOTA	RAC	7.5 0.4 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12
TIMING DEVICE CHARACTER Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm	: : : :	7.5 0.4 0.7 12	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650
TIMING DEVICE CHARACTER Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm	: : : :	7.5 0.4 0.7 12 800 1.1	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity
TIMING DEVICE CHARATED SPEEd rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm	: : : :	7.5 0.4 0.7 12	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5
TIMING DEVICE CHARACTER Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check	: : : :	7.5 0.4 0.7 12 800 1.1 0.4	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance
TIMING DEVICE CHARATED SPEED TO THE TOLERANCE MAN Shutoff solenoid Volt Rated speed rpm SV travel man Tolerance man Check tolerance man Check tolerance man Check tolerance man Check tolerance man check to	: : : :	7.5 0.4 0.7 12 800 1.1	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0
TIMING DEVICE CHARACTER Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid
TIMING DEVICE CHARATED SPEED TO THE TOLERANCE MAN Shutoff solenoid Volt Rated speed rpm SV travel man Tolerance man Check tolerance man Check tolerance man Check tolerance man Check tolerance man check to	: : : :	7.5 0.4 0.7 12 800 1.1 0.4	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12
TIMING DEVICE CHARACTER Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Del. quantity
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESSI Rated speed rpm	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Del. quantity cm3/1000 strokes : 2.5
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESSI Rated speed rpm Supply pomp	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000	Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000strokes : 6.5 Check tolerance cm3/1000s : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Del. quantity cm3/1000 strokes : 2.5 Tolerance
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 2.5
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 2.5 Check tolerance
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESSI Rated speed rpm Supply pomp pressure bar Tolerance hPa Shutoff solenoid	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8 0.3	Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 2.5
Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Shutoff solenoid Volt Rated speed rpm SV travel mm Tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Check tolerance mm Shutoff solenoid Volt SUPPLY PUMP PRESS Rated speed rpm Supply pomp pressure bar Tolerance hPa	: : : : : : : : : : : : : : : : : : :	7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8	DELIVERY AND BREAKAWAY CHARACTERISTIC Rated speed rpm : 2500 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. : 4.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2650 Del. quantity cm3/1000 strokes : 6.5 Check tolerance cm3/1000s. : 5.0 Shutoff solenoid Volt : 12 Rated speed rpm : 2750 Del. quantity cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 2.5 Tolerance cm3/1000 strokes : 2.5 Check tolerance

			+			
Rated speed rpm	:	2250	CHECKING LOA	D DEDE	NENT	
Del. quantity cm3/1000 strokes	:	36.2	+ CHECKING LOA + START OF DEL		NDENI	
Tolerance cm3/1000 strokes	:	1.0	DELIVERY DIF	FERENC	E	
Check tolerance cm3/1000s.	:	2.3	Rated speed		: 11	25
Shutoff solenoid Volt	:	12	+ Del. quantit + cm3/1000 str		: -	13.0
Rated speed rpm	:	1750	Tolerance cm3/1000 str		:	2.0
Del. quantity cm3/1000 strokes	:	35.9	Check tolera cm3/1000s.		:	2.0
Tolerance cm3/1000 strokes	:	1.0	+ Shutoff sole + Volt	noid	•	12
Check tolerance cm3/1000S.	:	2.3	+ TIMING-DEVIC	E TRAVI	EL DIF	FERENCE
Shutoff solenoid Volt	:	12	Rated speed		: 11	25
Rated speed rpm	:	800	+ Del. quantit + cm3/1000 str		:	-0.6
Del. quantity cm3/1000 strokes	:	35.2	Tolerance cm3/1000 str		:	0.1
Tolerance cm3/1000 strokes	:	1.5	- Check tolera - cm3/1000s.		:	0.1
Check tolerance cm3/1000S.	:	2.3	+ Shutoff sole + Volt	noid	;	12
Shutoff solenoid Volt	:	12	DELIVERY DIF	FERENCI	Ξ	
Rated speed rpm	:	1125	Rated speed		: 11	25
Del. quantity cm3/1000 strokes	:	36.7	Del. quantity		:	5.0
Tolerance cm3/1000 strokes	:	0.5	Tolerance cm3/1000 str		:	3.0
Check tolerance cm3/1000s.	:	2.3	+ Check toleran		:	3.0
Shutoff solenoid Volt	:	12	+ Shutoff soler + Volt	1010	}	12
			TIMING-DEVICE	E TRAVE	L DIF	FERENCE
ELECTR. SHUTOFF			Rated speed	mar:	113	25
CONTROL LEVER, ID	E ST	OP	Tolerance man			0.2
Rated speed rpm Del. quantity	:	425	tolerance mm Shutoff soler			0.3
cm3/1000 strokes Tolerance	:	1.5	Volt	:		12
cm3/1000 strokes Check tolerance	:	1.5	EXHAUST-GAS F	RECTROL	II ATTON	J
cm3/1000s.	:	1.5	+			
			+ Rated speed r + Del. quantity	į.		
			cm3/1000 stro			24.0
			+ cm3/1000 stro + Check tolerar			0.5
			+ cm3/1000s.	:		2.5

Shutoff solenoid 12 Volt START TRANSITION 310 Rated speed rpm Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 strokes : 10.0 Shutoff solenoid 12 Volt Rated speed rpm 210 Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 20.0 Shutoff solenoid 12 Volt ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,3 Tolerance mm : +-0,1 : 5,5 Dimension KF mm : +-0,2 Tolerance mm Dimension MS mm : 1,5 Tolerance mm : +-0,2 POTENTIOMETER SET 2. measurement : ARF 12,0 voltage Volt MICROSWITCH SET : 0,8..3,0 mm : 11,6..12,4 CONTROL LEVER POSITION SET Control lever position YA mm : 37,8..41,8 Control lever : 41,9..52,1 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.04.94 Edition Test oil : ISO 4113

: 0 460 494 300 Part no. Pump designation : VE4/9F2350R452-1

Customer-spec. information Customer : RENAULT : J8S - 784 CA Motor

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35 Tolerance bar :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1125

Setting mm 2.8 0.2 Tolerance mm :

Shutoff solenoid

Volt 12 SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Setting hPa 4.5 Tolerance hPa 0.3

Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes : 36.7

Tolerance

cm3/1000 strokes : 0.5

Spread

2.5 cm3/1000 strokes :

Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 6.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

2500 Rated speed rpm

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity

72.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

12 Volt

LOAD-DEPENDENT START OF DELIVERY

SETTING

DELIVERY DIFFERENCE

	1125	+ Rated speed		800
Del. quantity	44.6	+ Supply pomp		¬ ,
cm3/1000 strokes : Tolerance	-11.0	+ pressure ba		3.4 0.3
cm3/1000 strokes :	1.0	+ Shutoff sol		0.5
Shutoff solenoid	,	+ Volt	:	12
Volt :	12	+		
		+ OVERFLOW QL	JANTITY	
PRESSURE DIFFERENCE		† Datadanas		2250
Rated speed rpm :	1125	+ Rated speed + Overflow qu		2250
Del. quantity	1123	ccm/10s	:	97.2
cm3/1000 strokes :	-0.2	Tolerance	•	
Tolerance		ccm/10s	:	41.6
cm3/1000 strokes :	0.1	+		
Shutoff solenoid Volt :	12	+ Check toler + ccm/10s		41.6
vott .	12	Shutoff sol	enoid :	41.0
TIMING-DEVICE TRAVEL	DIFFERENCE	+ Volt	:	12
		+		
	1125	+ Rated speed		800
Del. quantity cm3/1000 strokes :	-0.6	+ Overflow qu + ccm/10s	uantity :	63.8
Tolerance	-0.0	Tolerance	•	65.6
cm3/1000 strokes :	0.1	- ccm/10s	:	22.2
Shutoff solenoid		+		
Volt :	12	+ Check toler	rance	
		+ ccm/10s	:	22.2
			anaid	
INJECTION-PUMP TEST	SPECIFICATIONS	+ Shutoff sol	enoid:	12
INJECTION-PUMP TEST	SPECIFICATIONS	+ Volt	enoid:	12
INJECTION-PUMP TEST TIMING DEVICE CHARAC		Volt	•	12 AY CHARACTERISTIC
TIMING DEVICE CHARAC		DELIVERY AN	: ID BREAKAWA	AY CHARACTERISTIC
TIMING DEVICE CHARAC	TERISTIC 2000	DELIVERY AN Rated speed Del. quanti	: ID BREAKAWA I rpm : ty	AY CHARACTERISTIC 2500
TIMING DEVICE CHARAC Rated speed rpm : SV travel mm :	TERISTIC 2000 7.5	DELIVERY AN Rated speed Del. quanti cm3/1000 st	: ID BREAKAWA I rpm : ty	AY CHARACTERISTIC 2500
TIMING DEVICE CHARAC Rated speed rpm : SV travel mm : Tolerance mm :	TERISTIC 2000	DELIVERY AND Rated speed Del. quanti cm3/1000 st	: ID BREAKAWA I rpm : ty rokes :	AY CHARACTERISTIC 2500 23.0
TIMING DEVICE CHARAC Rated speed rpm : SV travel mm : Tolerance mm : Check	7.5 0.4	Polt DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st	: ID BREAKAWA I rpm : ty rokes :	AY CHARACTERISTIC 2500
TIMING DEVICE CHARACTER Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm :	TERISTIC 2000 7.5	DELIVERY AND Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st Check toler	: ID BREAKAWA I rpm : ty rokes : rokes :	AY CHARACTERISTIC 2500 23.0
TIMING DEVICE CHARAC Rated speed rpm : SV travel mm : Tolerance mm : Check	7.5 0.4	PELIVERY AND Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st Check toler cm3/1000s. Shutoff sol	: ID BREAKAWA I rpm : ty :rokes : rokes :	AY CHARACTERISTIC 2500 23.0 3.0 4.0
TIMING DEVICE CHARACTER Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :	7.5 0.4 0.7	DELIVERY AND Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st Check toler cm3/1000s.	: ID BREAKAWA I rpm : ty :rokes : rokes :	AY CHARACTERISTIC 2500 23.0 3.0
TIMING DEVICE CHARACTER Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid	7.5 0.4 0.7	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st Check toler cm3/1000s. Shutoff sol	ID BREAKAWA I rpm : ty rokes : rokes : rance : enoid :	AY CHARACTERISTIC 2500 23.0 3.0 4.0
TIMING DEVICE CHARACTER Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt : Rated speed rpm :	7.5 0.4 0.7 12	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st Check toler cm3/1000s. Shutoff sol Volt Rated speed	ID BREAKAWA I rpm : ty rokes : rokes : rance : enoid :	AY CHARACTERISTIC 2500 23.0 3.0 4.0
TIMING DEVICE CHARACTER Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :	7.5 0.4 0.7	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st Check toler cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st	ID BREAKAWA I rpm : ty rokes : rokes : enoid : ty rokes :	AY CHARACTERISTIC 2500 23.0 3.0 4.0
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt : Rated speed rpm : SV travel mm : Tolerance mm : Check	7.5 0.4 0.7 12 800 1.1 0.4	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000 st Check toler cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st Check toler	ID BREAKAWA I rpm : ty rokes : rokes : enoid : ty rokes :	2500 23.0 3.0 4.0 12 2650 6.5
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm :	TERISTIC 2000 7.5 0.4 0.7 12 800 1.1	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000s. Check toler cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : ance : enoid : ty rokes : ance :	2500 23.0 3.0 4.0 12
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt : Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid	TERISTIC 2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000s. Shutoff sol	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : ance : enoid : ty rokes : ance :	2500 23.0 3.0 4.0 12 2650 6.5 5.0
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm :	7.5 0.4 0.7 12 800 1.1 0.4	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000s. Check toler cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : ance : enoid : ty rokes : ance :	2500 23.0 3.0 4.0 12 2650 6.5
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt : Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid	2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000s. Shutoff sol Volt Rated speed	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : enoid : enoid : enoid :	2500 23.0 3.0 4.0 12 2650 6.5 5.0
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt : Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt : SUPPLY PUMP PRESSURE	2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000s. Shutoff sol Volt Rated speed Del. quanti	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty ty rokes : enoid :	AY CHARACTERISTIC 2500 23.0 3.0 4.0 12 2650 6.5 5.0 12
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: SUPPLY PUMP PRESSURE Rated speed rpm :	2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7	PELIVERY AND Rated speed Del. quanti cm3/1000 st Check toler cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000 st	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty ty rokes : enoid :	2500 23.0 3.0 4.0 12 2650 6.5 5.0
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: SUPPLY PUMP PRESSURE Rated speed rpm : Supply pomp	2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000	DELIVERY AN Rated speed Del. quanti cm3/1000 st Tolerance cm3/1000s. Shutoff sol Volt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Tolerance	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : ance : enoid : ty rokes : ance : enoid : ty rokes :	2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: SUPPLY PUMP PRESSURE Rated speed rpm :	2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC	PELIVERY AND Rated speed Del. quanti cm3/1000 st Check toler cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000 st	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes :	AY CHARACTERISTIC 2500 23.0 3.0 4.0 12 2650 6.5 5.0 12
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: SUPPLY PUMP PRESSURE Rated speed rpm : Supply pomp pressure bar : Tolerance hPa : Shutoff solenoid	2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8 0.3	PELIVERY AND Rated speed Del. quanti cm3/1000 st Check toler cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000s.	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid :	2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5
TIMING DEVICE CHARACT Rated speed rpm : SV travel mm : Tolerance mm : Check tolerance mm : Shutoff solenoid Volt :: Rated speed rpm : SV travel mm :: Tolerance mm :: Check tolerance mm :: SUPPLY PUMP PRESSURE Rated speed rpm : Supply pomp pressure bar : Tolerance hPa ::	2000 7.5 0.4 0.7 12 800 1.1 0.4 0.7 12 CHARACTERISTIC 2000 6.8	PELIVERY AND Rated speed Del. quanti cm3/1000 st Check toler cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000s. Shutoff solvolt Rated speed Del. quanti cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler cm3/1000 st Check toler	ID BREAKAWA I rpm : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid : ty rokes : enoid :	2500 23.0 3.0 4.0 12 2650 6.5 5.0 12 2750 2.5 2.5

			+			
Rated speed rpm Del. quantity	:	2250	‡	CHECKING LOAD-DEF	PEND	PENT
cm3/1000 strokes Tolerance	:	36.2	Ì	START OF DELIVERY	_	
cm3/1000 strokes Check tolerance	;	1.0	Ŧ	DELIVERY DIFFEREN	√ CE	
cm3/1000s. Shutoff solenoid	:	2.3	Ŧ		:	1125
Volt	:	12	Ŧ	Del. quantity cm3/1000 strokes	:	-13.0
Rated speed rpm Del. quantity	:	1750	Ŧ	Tolerance cm3/1000 strokes Check tolerance	:	2.0
cm3/1000 strokes Tolerance	:	35.9	Ŧ	cm3/1000s. Shutoff solenoid	:	2.0
cm3/1000 strokes Check tolerance	:	1.0	Ŧ	Volt	:	12
cm3/1000s. Shutoff solenoid	:	2.3	Ŧ	TIMING-DEVICE TRA	VEL	DIFFERENCE
Volt	:	12	1	Rated speed rpm Del. quantity	:	1125
Rated speed rpm Del. quantity	:	800	Ŧ	cm3/1000 strokes Tolerance	:	-0.6
cm3/1000 strokes Tolerance	:	35.2	$\frac{1}{2}$	cm3/1000 strokes Check tolerance	:	0.1
cm3/1000 strokes Check tolerance	:	1.5	$\frac{1}{2}$	cm3/1000S. Shutoff solenoid	:	0.1
cm3/1000s. Shutoff solenoid	:	2.3	1	Volt	:	12
Volt	:	12	<u> </u>	DELIVERY DIFFEREN	ICE	
Rated speed rpm Del. quantity	:	1125	<u> </u>	Rated speed rpm Del. quantity	:	1125
cm3/1000 strokes Tolerance	:	36.7	+	cm3/1000 strokes Tolerance	:	5.0
cm3/1000 strokes Check tolerance	:	0.5	1	cm3/1000 strokes Check tolerance	:	3.0
cm3/1000s. Shutoff solenoid	:	2.3	<u> </u>	cm3/1000S. Shutoff solenoid	:	3.0
Volt	:	12	<u> </u>	Volt	:	12
	<u></u>			TIMING-DEVICE TRA	VEL	DIFFERENCE
ELECTR. SHUTOFF CONTROL LEVER, ID	LE S	TOP	‡	Rated speed rpm Tolerance mm	: :	1125 0. 2
Rated speed rpm	:	425	‡	Check tolerance mm	:	0.3
Del. quantity cm3/1000 strokes	:	1.5	‡	Shutoff solenoid Volt	:	12
Tolerance cm3/1000 strokes	:	1.5	Ŧ			
Check tolerance cm3/1000S.	:	1.5	‡	EXHAUST-GAS RECIR		
			‡	Rated speed rpm Del. quantity		
			‡	cm3/1000 strokes Tolerance		
			‡	cm3/1000 strokes Check tolerance	:	0.5
			+	cm3/1000s.	:	2.5

Shutoff solenoid

Volt : 12

START TRANSITION

Rated speed rpm : 310

Del. quantity

cm3/1000 strokes : 35.0

Tolerance

cm3/1000 strokes : 10.0

Shutoff solenoid

Volt : 12

Rated speed rpm : 210

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,5

Tolerance mm : +-0,2 Dimension MS mm : 1,5

Tolerance mm : +0,2

POTENTIOMETER

SET

2. measurement

voltage Volt : ARF 12,0

MICROSWITCH

SET

mm : 0,8...3,0

: 11,6..12,4

CONTROL LEVER POSITION

SET

Control Lever

position YA mm : 37,8..41,8

Control Lever

position YB mm : 41,9..52,1

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.07.95 Edition Test oil : ISO 4113

: 0 460 494 381 Part no. Pump designation : VE4/9F2050R452-3

Customer-spec, information : RENAULT Customer : J8S - 758 Motor : 51.0 Power KH

TEST BENCH REQUIREMENTS

Calibrating oil

return

temperature *C Tolerance °C

Overflow

restriction mm 0.55 :

Inlet press. bar : 0.350.05 Tolerance bar :

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance par

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1125 Rated speed rpm :

Setting mm 2.8 : Tolerance mm 0.2 : Shutoff solenoid 12

Volt

SUPPLY PUMP PRESSURE

Rated speed rpm : 1125

Setting hPa 4.5 Tolerance hPa 0.3 Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1125 Del. quantity

cm3/1000 strokes : 35.7

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5 Shutoff solenoid

12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 4.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

12 Volt

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2200

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

ca3/1000 strokes : 3.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid Volt	;	12	†	SUPPLY PUMP PRESS	URE	CHARACTER	ISTIC
			1	Rated speed rpm Supply pomp	:	2000	
LOAD-DEPENDENT ST	ART	OF DELTVERY	1	pressure bar	•	6.8	
SETTING		OF DEELVERY	1	Tolerance hPa	:	0.3	
26111140			T	Shutoff solenoid	•	0.5	
DELIVERY DIFFEREN	ICE		Ŧ	Volt	:	12	
		4405	†				
Rated speed rpm	:	1125	+	Rated speed rpm	:	800	
Del. quantity			+	Supply pomp			
cm3/1000 strokes	:	-11.0	+	pressure bar	:	3.4	
Tolerance			+	Tolerance hPa	:	0.3	
cm3/1000 strokes	:	1.0	1	Shutoff solenoid			
Shutoff solenoid	-	. –	1	Volt	•	12	
Volt		12	1		•	,-	
10(1	•	,,,	1	OVERFLOW QUANTITY			
PRESSURE DIFFEREN)CE		T	OVERTION GOARTITT			
PRESSORE DIFFEREN	CE		T	Datad aread non		2000	
Datad annul		1125	T		:	2000	
Rated speed rpm	:	1125	Ť	Overflow quantity		07.0	
Del. quantity		2 2	†	ccm/10s	:	97.2	
cm3/1000 strokes	:	-0.2	t	Tolerance			
Tolerance			†	ccm/10s	;	41.6	
cm3/1000 strokes	:	0.1	+				
Shutoff salenoid			+	Check tolerance			
Volt	:	12	+	ccm/10s	:	41.6	
			+	Shutoff solenoid			
TIMING-DEVICE TRA	VEL	DIFFERENCE	+	Volt	:	12	
			+				
Rated speed rpm	:	1125	+	Rated speed rpm	:	800	
Del. quantity			+	Overflow quantity			
cm3/1000 strokes	:	-0.6	1	ccm/10s	:	62.5	
Tolerance			1	Tolerance			
cm3/1000 strokes	•	0.1	1	ccm/10s	•	22.2	
Shutoff solenoid	•	•••	1		•		
Volt	•	12	1	Check tolerance			
VOCE	•	16	1	ccm/10s		22.2	
			1	Shutoff solenoid	•		
INJECTION-PUMP TE	CT (CDECTETCATIONS	I	Volt		12	
INJECTION-FOME TE	٠ ، ،	SPECTI TOMITOMS	I	VOCE	•	12	
TIMING DEVICE CHA	RAC	TERISTIC	Ŧ	DELIVERY AND BREAK	<awa< td=""><td>Y CHARACT</td><td>ERISTIC</td></awa<>	Y CHARACT	ERISTIC
Dodad operal pro-		2000	Ť	Datad speed and		2200	
Rated speed rpm	:	2000	T	Rated speed rpm	:	ددنان	
6 14 4 5 5 1 5 5 5	_	7 -	Ť	Del. quantity	_	20.0	
SV travel mm	•	7.5	Ť	cm3/1000 strokes	•	20.0	
Tolerance mm	:	0.4	†	olerance		7.0	
Check			+	cm3/1000 strokes	:	3.0	
tolerance mm	:	0.7	+	Check tolerance			
Shutoff solenoid			+	cm3/1000s.	:	4.0	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
Rated speed rpm	:	800	+				
			+	Rated speed rpm	:	2350	
SV travel mm	:	1.1	+	Del. quantity			
Tolerance mm	:	0.4	+	cm3/1000 strokes	:	6.5	
Check			1	Check tolerance			
tolerance mm	:	0.7	1	cm3/1000s.	:	5.0	
Shutoff solenoid	•	= * *	1	Shutoff solenoid		- 	
Volt	•	12	1	Volt	:	12	
V-(L	•	1 =	1		•	, _	

			+	Tolerance			
Rated speed rpm	:	2450	+	cm3/1000 strokes	:	1.5	
Del. quantity		2.5	+	Check tolerance		4.5	
cm3/1000 strokes Tolerance	:	2.5	†	cm3/1000s.	:	1.5	
cm3/1000 strokes		2.5	Ī	Spread cm3/1000 strokes		5.0	
Check tolerance	•	2.5	1	CIID/ 1000 SCI ORCS	•	J.0	
cm3/1000s.	:	2.5	+	FULL-LOAD STOP CO	NTR	OL LEVER	
Shutoff solenoid			+				
Volt	:	12	+	Rated speed rpm	:	400	
Rated speed rpm	:	2000	†	Del. quantity cm3/1000 strokes		1.5	
Del. quantity	•	2000	I	Tolerance	•	1.5	
cm3/1000 strokes	:	34.8	1	cm3/1000 strokes	:	1.5	
Tolerance			+	Spread			
cm3/1000 strokes	:	1.0	+	cm3/1000 strokes	:	5.0	
Check tolerance		2.7	†	Check tolerance		4 5	
cm3/1000s. Shutoff solenoid	:	2.3	†	cm3/1000s.	•	1.5	
Volt	:	12	I	Spread cm3/1000 strokes	:	5.0	
1000	•		+	ciiisi 1000 oct okes	•	3.0	
Rated speed rpm	:	1750	+				
Del. quantity			+				
cm3/1000 strokes	:	34.9	†				
Tolerance cm3/1000 strokes		1.0	†				
Check tolerance	•	1.0	I	CHECKING LOAD-DEF	FND	FNT	
cm3/1000s.	:	2.3	1	START OF DELIVERY		2141	
Shutoff solenoid			+				
Volt	:	12	+	DELIVERY DIFFEREN	ICE		
Dahad annad ann		800	†	Datad aread are		1125	
Rated speed rpm Del. quantity	:	000	Ī	Rated speed rpm Del. quantity	:	1125	
cm3/1000 strokes	:	34.2	1	cm3/1000 strokes	:	-13.0	
Tolerance	,		+	Tolerance			
cm3/1000 strokes	:	1.5	+	cm3/1000 strokes	:	2.0	
Check tolerance		2.7	†	Check tolerance		2.0	
cm3/1000S. Shutoff solenoid	:	2.3	†	cm3/1000S. Shutoff solenoid	:	2.0	
Volt	•	12	I	Volt	:	12	
VO(1	•		1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•		
Rated speed rpm	:	1125	+	TIMING-DEVICE TRA	VEL	DIFFERENCE	
Del. quantity		25.2	+			4425	
cm3/1000 strokes	:	35.7	†	Rated speed rpm Del. quantity	:	1125	
Tolerance cm3/1000 strokes		0.5	I	cm3/1000 strokes	•	-0.6	
Check tolerance	•	0.5	1	Tolerance	•	0.0	
cm3/1000s.	:	2.3	+	cm3/1000 strokes	•	0.1	
Shutoff solenoid		4.0	+	Check tolerance		0.4	
Volt	:	12	†	cm3/1000s.	:	0.1	
			Ī	Shutoff solenoid Volt	•	12	
			 	7000	•	· •	
ELECTR. SHUTOFF			+	DELIVERY DIFFEREN	CE		
CONTROL LEVER, ID	LE S	TOP	+			4405	
On Annal among Among		/00	†	Rated speed rpm	:	1125	
	:	400	†	Del. quantity cm3/1000 strokes		5.0	
Del. quantity cm3/1000 strokes	:	1.5	I	Tolerance	•	J.U	
J.1107 1 000 0 01 01 01 00	•		+	cm3/1000 strokes	:	3.0	
			•				

Check tolerance

3.0 cm3/1000s.

Shutoff solenoid

12 Volt

TIMING-DEVICE TRAVEL DIFFERENCE

1125 Rated speed rpm Tolerance mm 0.2

Check

tolerance mm 0.3

Shutoff solenoid

Volt 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm 1000

Del. quantity cm3/1000 strokes :

24.0

Tolerance

Volt

0.5 cm3/1000 strokes :

Check tolerance

cm3/1000s.

2.5

Shutoff solenoid

12

START TRANSITION

Rated speed rpm 310

Del. quantity

cm3/1000 strokes :

35.0

Tolerance

cm3/1000 strokes 10.0

Shutoff solenoid

12 Volt

210 Rated speed rpm

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

20.0 cm3/1000 strokes

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3

Tolerance mm : +-0,1

: 5,5 Dimension KF mm

Tolerance mm : +-0,2

Dimension MS mm : 1,2

Tolerance mm : +-0,2

MICROSWITCH

SET

: ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.07.95 Edition : ISO 4113 Test oil

: 0 460 484 085 Part no. Pump designation: VE4/8F2300R459-2

Customer-spec. information : RENAULT Customer Motor : F8Q - 732 47.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C

Overflow

0.55 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar 3

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450 :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1250 Rated speed rpm :

Setting mm 4.3 • Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Setting hPa 4.8 Tolerance hPa 0.3 • Shutoff solenoid Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

1250 Rated speed rpm : Del. quantity

cm3/1000 strokes : 32.1 Tolerance

cm3/1000 strokes : 0.5 Spread

cm3/1000 strokes : 2.5 Shutoff solenoid

Volt 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 550

Del. quantity cm3/1000 strokes :

3.0 Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

Rated speed rpm 2450 Del. quantity

cm3/1000 strokes : 28.5 Tolerance

cm3/1000 strokes

3.0

Shutoff solenoid

Volt 12

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : 15.0

Shutoff solenoid Volt		12	+	Datad aread non		310
VOCE	•	12	I	Rated speed rpm	:	310
			1	SV travel mm	:	1.8
			+	Tolerance mm	:	1.2
LOAD-DEPENDENT ST	ART O	F DELIVERY	+	Check		4.0
SETTING			†	tolerance mm Shutoff solenoid	:	1.2
DELIVERY DIFFEREN	ire		I	Volt		12
DEETVENT DITTEREN			1	VOCC	•	
Rated speed rpm	: 1	1250	+	KSB/AFB Volt	:	12
Del. quantity		0.7	+	0.4.4		F00
cm3/1000 strokes Tolerance	•	-8.7	Ī	Rated speed rpm	:	500
cm3/1000 strokes	:	1.0	1	SV travel mm	:	3.1
Shutoff sclenoid			+	Tolerance mm	:	1.2
Volt	:	12	+	Check		4.2
PRESSURE DIFFEREN	ICE		1	tolerance mm Shutoff solenoid	:	1.2
LYCOPONE DILLEVEN	CE		Ţ	Volt	:	12
Rated speed rpm	: 1	1250	+		·	
Del. quantity			+	KSB/AFB Volt	:	12
cm3/1000 strokes	:	-0.2	†	SUPPLY PUMP PRESS	LIDE	CHADACTEDISTIC
Tolerance cm3/1000 strokes		0.1	I	SUPPLI PUMP PRESS	UKE	CHARACIERISTIC
Shutoff solenoid	•	0.1	1	Rated speed rpm	:	2000
Volt	:	12	+	Supply pomp		
********	5.7	reeneuae	+	pressure bar	;	6.8
TIMING-DEVICE TRA	AFF DI	LFFERENCE	İ	Tolerance hPa Shutoff solenoid	:	0.3
Rated speed rpm	: 1	1250	1	Volt	:	12
Del. quantity			+			
cm3/1000 strokes	:	-0.4	+	Rated speed rpm	:	750
Tolerance cm3/1000 strokes		0.1	İ	Supply pomp pressure bar		3.4
Shutoff solenoid	•	0.1	I	Tolerance hpa	:	0.3
Volt	:	12	+	Shutoff solenoid	•	
			+	Volt	:	12
INJECTION-PUMP TE	CT CDE	CTETCATIONS	İ	OVERFLOW QUANTITY		
TIMECTION-PUMP TE	SI SPE	CIPICATIONS	I	OVERFLOW GOARVITTE		
TIMING DEVICE CHA	RACTER	RISTIC	+	Rated speed rpm	:	2250
	_		+	Overflow quantity		
Rated speed rpm	: 2	2000	†	ccm/10s Tolerance	:	97.2
SV travel mm	•	8.0	Ī	ccm/10s	•	41.6
Tolerance mm	:	0.4	1		•	
Check			+	Check tolerance		
tolerance mm	:	0.7	†	ccm/10s Shutoff solenoid	:	41.6
Shutoff solenoid Volt	•	12	I	Volt		12
VOCC	•	16	1	VOCC	•	, _
Rated speed rpm	:	750	+	Rated speed rpm	:	750
014 August -	_	2.1	†	Overflow quantity		47 0
SV travel mm Tolerance mm	:	2.1 0.4	İ	ccm/10s Tolerance	:	63.8
Check	•	V• T	+	ccm/10s	:	22.2
tolerance mm	:	0.7	+			
Shutoff solenoid		43	+	Check tolerance	_	22.2
Volt	:	12	+	ccm/10s	:	22.2

Shutoff solenoid Volt	:	12	‡	Shutoff solenoid Volt	:	12	
DELIVERY AND BREA	KAWA	Y CHARACTERISTIC	Ŧ	Rated speed rpm Del. quantity	:	750	
Rated speed rpm Del. quantity	:	2450	1	cm3/1000 strokes Tolerance	:	31.7	
cm3/1000 strokes Tolerance	:	28.5	<u> </u>	cm3/1000 strokes Check tolerance	:	1.5	
cm3/1000 strokes Check tolerance	:	3.0	‡	cm3/1000s. Shutoff solenoid	:	2.3	
cm3/1900s. Shutoff solenoid	:	4.0	‡	Volt	:	12	
Volt	:	12	+	Rated speed rpm Del. quantity			
Rated speed rpm Del. quantity			‡	cm3/1000 strokes Tolerance			
cm3/1000 strokes Check tolerance	•	14.5	‡	cm3/1000 strokes Check tolerance		0.5	
cm3/1000S. Shutoff solenoid Volt	:	5.0 12	Ŧ	cm3/1000S. Shutoff solenoid Volt		2.3 12	
Rated speed rpm	:		Ŧ	VOCC	٠	12	
Del. quantity cm3/1000 strokes		2.5	‡	ELECTR. SHUTOFF			
Tolerance cm3/1000 strokes		2.5	‡	CONTROL LEVER, ID	LE S	STOP	
Check tolerance cm3/1000s.	:	2.5	‡	Rated speed rpm Del. quantity			
Shutoff solenoid Volt	•	12	+	cm3/1000 strokes Tolerance		1.5	
Rated speed rpm	:	2250	Ŧ	cm3/1000 strokes Check tolerance		1.5 1.5	
Del. quantity cm3/1000 strokes Tolerance	:	34.0	Ī	cm3/1000s. Spread cm3/1000 strokes		5.0	
cm3/1000 strokes Check tolerance	:	1.0	Ī	FULL-LOAD STOP CO			
cm3/1000s. Shutoff solenoid	:	2.3	‡	Rated speed rpm	:	410	
Volt	:	12	‡	Del. quantity cm3/1000 strokes	:	1.5	
Rated speed rpm Del. quantity	:	1625	†	Tolerance cm3/1000 strokes	:	1.5	
cm3/1000 strokes Tolerance	:	31.6	‡	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	:	1.5 2.3	Ŧ	Check tolerance cm3/1000s. Spread	:	1.5	
	•	12	I	cm3/1000 strokes	:	5.0	
Rated speed rpm	:	2000	‡				
Del. quantity cm3/1000 strokes		33.5	‡				
Tolerance cm3/1000 strokes	:	1.0	+	CHECKING LOAD-DEP		NT	
Check tolerance cm3/1000s.	:	2.3	‡	START OF DELIVERY			

DELIVERY DIFFERENCE

Rated speed rpm 1250

Del. quantity cm3/1000 strokes :

-11.0

Tolerance

cm3/1000 strokes : 2.0

Check tolerance

2.0

cm3/1000s.

Shutoff solenoid Volt

12

TIMING-DEVICE TRAVEL DIFFERENCE

1250 Rated speed rpm

Del. quantity

cm3/1000 strokes :

-0.4

Tolerance

cm3/1000 strokes : 0.1

Check tolerance

cm3/1000s.

0.1

Shutoff solenoid Volt

12

DELIVERY DIFFERENCE

1250 Rated speed rpm

Del. quantity

cm3/1000 strokes : 5.0

Tolerance

cm3/1000 strokes 3.0

Check tolerance

cm3/1000s.3.0

Shutoff solenoid

Volt 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm 1250 0.2 Tolerance mm

Check

0.3 tolerance mm

Shutoff solenoid

12 Volt

START TRANSITION

310 Rated speed rpm

Del. quantity cm3/1000 strokes :

30.0

Tolerance

cm3/1000 strokes 15.0

Shutoff solenoid

Volt

12

210 Rated speed rpm

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes 15.0

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 : +-1 Tolerance man Dimension KF mm : 5,4

Tolerance mm : +-0,2

Dimension MS mm : 1,3 : +-0,2 Tolerance mm

MICROSWITCH

SET

: 0,8..3,0 mm

: 9,8..10,6

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.11.95 Test oil : ISO 4113

Part no. : 0 460 484 095 Pump designation : VE4/8F2300R463-1

Customer-spec. information
Customer : FIAT-AUTO
Motor : M708SA17/L014
Power KW : 42.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.0ប

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 5.3
Tolerance mm : 0.2
Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 5.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 29.3
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

450 Rated speed rpm Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : 2.0 Shutoff solenoid Volt 12 Spread cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : 3.0

Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 50.0

Tolerance		+
cm3/1000 strokes	: 13.0	+ Rated speed rpm : 2000
Shutoff solenoid		+
Volt	: 12	+ SV travel mm : 7.6
		† Tolerance mm : 0.4
		+ Shutoff solenoid
		+ Volt : 12
LOAD-DEPENDENT ST	TART OF DELIVERY	+
SETTING		+ SUPPLY PUMP PRESSURE CHARACTERISTIC
		+
DELIVERY DIFFEREN	VCE	+ Rated speed rpm : 2300
		+ Supply pomp
Rated speed rpm	: 1500	+ pressure bar : 7.7
Del. quantity		+ Tolerance hPa : 0.3
cm3/1000 strokes	: -8.0	+ Shutoff solenoid
Tolerance		+ Volt : 12
cm3/1000 strokes	: 1.0	+
Shutoff solenoid	40	+ Rated speed rpm : 600
Volt	: 12	+ Supply pomp
D0000100 010000	105	pressure bar : 3.4
PRESSURE DIFFEREN	N.E	+ Tolerance hPa : 0.3
Datasi annod non	: 1500	+ Shutoff solenoid + Volt : 12
Rated speed rpm Del. quantity	: 1500	† Volt : 12
cm3/1000 strokes	: -0.2	OVERFLOW QUANTITY
Tolerance	. 0.2	I OVERVIEW MONITORIA
cm3/1000 strokes	: 0.1	Rated speed rpm : 2300
Shutoff solenoid	• • • • • • • • • • • • • • • • • • • •	+ Overflow quantity
Volt	: 12	+ ccm/10s : 97.2
		+ Tolerance
TIMING-DEVICE TRA	VEL DIFFERENCE	+ ccm/10s : 41.6
		+
Rated speed rpm	: 1500	† Check tolerance
Del. quantity	• •	+ ccm/10s : 41.6
cm3/1000 strokes	: −0.8	+ Shutoff solenoid
Tolerance	0.4	+ Volt : 12
cm3/1000 strokes	: 0.1	Datadanadana (00
Shutoff solenoid	: 12	+ Rated speed rpm : 600
Volt	: 12	+ Overflow quantity + ccm/10s : 63.8
		+ ccm/1Us : 63.8 + Tolerance
INJECTION-PUMP TE	ST SPECIFICATION	+ ccm/10s : 22.2
1140 2011014 1 0111 12	or or colling a real	
TIMING DEVICE CHA	RACTERISTIC	Check tolerance
		+ ccm/10s : 22.2
Rated speed rpm	: 2300	+ Shutoff solenoid
Tolerance mm	: 0.4	+ Volt : 12
Check		}
tolerance mm	: 0.7	+ DELIVERY AND BREAKAWAY CHARACTERISTIC
Shutoff solenoid		†
Volt	: 12	+ Rated speed rpm : 2500
		+ Del. quantity
Rated speed rpm	: 800	cm3/1000 strokes : 20.0
Ou Amount am	. 20	+ Tolerance + cm3/1000 strokes : 3.0
SV travel mm	: 2.0 : 0.4	+ cm3/1000 strokes : 3.0 + Check tolerance
Tolerance mm Check	: 0.4	- check toterance - cm3/1000s. : 5.0
tolerance mm	: 0.9	+ Shutoff solenoid
COLETONICE WILL	• 0.7	
		+ Volt : 12
Shutoff solenoid Volt	: 12	+ Volt : 12

Rated speed rpm	:	2700	+				
Del. quantity cm3/1000 strokes	:	5.0	‡	ELECTR. SHUTOFF			
Check tolerance cm3/1000s.	:	5.0	†	CONTROL LEVER, ID	DLE ST	OP	
Shutoff solenoid Valt	:	12	+	Rated speed rpm Del. quantity	:	450	
Rated speed rpm	:	2900	‡	cm3/1000 strokes Tolerance	:	1.5	
Del. quantity cm3/1000 strokes		0.8	1	cm3/1000 strokes Check tolerance	:	1.5	
Tolerance cm3/1000 strokes		0.8	1	cm3/1000s. Spread	:	1.5	
Check tolerance cm3/1000s.		0.8	+	cm3/1000 strokes	:	5.0	
Shutoff solenoid	:	12	Ŧ	FULL-LOAD STOP CO	NTROL	LEVER	
Volt	•		‡	Rated speed rpm	:	450	
Rated speed rpm Del. quantity			‡	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000 strokes Tolerance		31.1	‡	Tolerance cm3/1000 strokes	:	1.5	
cm3/1000 strokes Check tolerance	:	1.2	‡	Spread cm3/1000 strokes	:	5.0	
cm3/1000S. Shutoff solenoid	:	2.5	+	Check tolerance cm3/1000s.	:	1.5	
Volt	:	12	‡	Spread cm3/1000 strokes	:	5.0	
Rated speed rpm Del. quantity	:	1000	+	IDLE DELIVERY			
cm3/1000 strokes Tolerance	:	30.0	<u> </u>	Rated speed rpm	:	650	
cm3/1000 strokes Check tolerance	:	1.2	1	Del. quantity cm3/1000 strokes		2.5	
cm3/1000s. Shutoff solenoid	:	2.3	+	Tolerance cm3/1000 strokes		2.5	
Volt	:	12	Ŧ	Check tolerance cm3/1000s.	•	2.5	
Rated speed rpm	:	600	7	Shutoff solenoid	•		
Del. quantity cm3/1000 strokes	:	30.0	Ŧ	Volt	:	12	
Tolerance cm3/1000 strokes	:	1.5	‡	Rated speed rpm Del. quantity		550	
Check tolerance cm3/1000s.	:	3.5	‡	cm3/1000 strokes Tolerance			
Shutoff solenoid Volt	:	12	‡	cm3/1000 strokes Check tolerance		3.0	
Rated speed rpm	:	1500	‡	cm3/1000S. Shutoff solenoid		5.5	
Del. quantity cm3/1000 strokes	:	29.3	‡	Volt	:	12	
Tolerance cm3/1000 strokes		0.5	‡				
Check tolerance cm3/1000s.	:	2.3	1			···	
Shutoff solenoid Volt	:	12	1	CHECKING LOAD-DEP		Т	
	•	· •	-	DELIVERY DIFFEREN			
			I	PERTACK! NTLLEMEN	<u>. </u>		

Rated speed rpm	: 1500
Del. quantity cm3/1000 strokes	: -10.0
Tolerance cm3/1000 strokes	: 3.0
Check tolerance cm3/1000s.	: 4.0
Shutoff solenoid Volt	: 12
TIMING-DEVICE TRA	AVEL DIFFERENCE
Rated speed rpm	: 1500
Del. quantity cm3/1000 strokes	: -0.8
Tolerance cm3/1000 strokes	: 0.1
Check tolerance cm3/1000s.	: 0.1
Shutoff solenoid Volt	: 12
	· · · · · · · ·
START TRANSITION	
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 30.0
cm3/1000 strokes Shutoff solenoid	: 5.0
Volt	: 12
Rated speed rpm	: 350
Del. quantity	
cm3/1000 strokes Tolerance	
cm3/1000 strokes Shutoff solenoid	: 8.0
Volt	: 12
ASSEMBLY AND ADJU	STMENT DIMENSIONS
Dimension K mm	: 3,3
To:lerance mm Dimension KF mm	: +_0,1 : 5,5
	: +-0,2
iolerance mm	
Tolerance mm Dimension MS mm Tolerance mm	: 1,8 : +-0,2

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.02.96 Test oil : ISO 4113

Part no. : 0 460 494 356 Pump designation : VE4/9F2100R471-1

Customer-spec. information

Customer : VW

Motor : 1,9 L UD f. T4

Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,9
Tolerance mm : +-0,02

Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.9
Tolerance mm : 0.2
Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.6 Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550 Del. quantity

cm3/1000 strokes : 5.5

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400

Del. quantity cm3/1000 strokes :

okes : 15.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid Volt

: 12

STARTING FUEL DELIVERY	+ Tolerance mm : 0.4 + Check
Rated speed rpm : 100 Del. quantity	tolerance mm : 0.8 Shutoff solenoid
cm3/1000 strokes : 65.0 Tolerance	Volt : 12
cm3/1000 strokes : 25.0 Shutoff solenoid	SUPPLY PUMP PRESSURE CHARACTERISTIC
Volt : 12	Rated speed rpm : 1700 Supply pomp
	pressure bar : 6.9
	+ Tolerance hPa : 0.3
LOAD-DEPENDENT START OF DELIVERY	+ Shutoff solenoid
SETTING	+ Volt : 12
DELIVERY DIFFERENCE	Rated speed rpm : 750 Supply pomp
Rated speed rpm : 1250	pressure bar : 4.1
Del. quantity	† Tolerance hPa : 0.3
cm3/1000 strokes : -7.0	+ Shutoff solenoid
Tolerance	+ Volt : 12
cm3/1000 strokes : 1.0	+
Shutoff solenoid	+ OVERFLOW QUANTITY
Volt : 12	+
PRESSURE DIFFERENCE	+ Rated speed rpm : 1850 + Overflow quantity
	+ ccm/10s : 97.2
Rated speed rpm : 1250	† Tolerance
Del. quantity	+ ccm/10s : 41.6
cm3/1000 strokes : -0.2	+
Tolerance	† Check tolerance
cm3/1000 strokes : 0.1	+ ccm/10s : 55.5
Shutoff solenoid	Shutoff solenoid
Volt : 12	+ Volt : 12
	+
TIMING-DEVICE TRAVEL DIFFERENCE	+ Rated speed rpm : 750 + Overflow quantity
Rated speed rpm : 1250 Del. quantity	ccm/10s : 63.8 Tolerance
cm3/1000 strokes : -1.0	+ ccm/10s : 22.2
Tolerance	1
cm3/1000 strokes : 0.1	- Check tolerance
Shutoff solenoid	- ccm/10s : 34.7
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
INJECTION-PUMP TEST SPECIFICATIONS	DELIVERY AND BREAKAWAY CHARACTERISTIC
	+
TIMING DEVICE CHARACTERISTIC	+ Rated speed rpm : 2400 + Del. quantity
Rated speed rpm : 1700	+ cm3/1000 strokes : 15.0
Tolerance mm : 0.4	+ Tolerance
Check	+ cm3/1000 strokes : 2.0
tolerance mm : 0.8	+ Check tolerance
Shutoff solenoid	+ cm3/1000s. : 4.0
Volt : 12	+ Shutoff solenoid
	+ Volt : 12
Rated speed rpm : 750	+
	+ Rated speed rpm : 2250
SV travel mm : 1.5	+

Del. quantity			
cm3/1000 strokes	:	29.0	
Tolerance	•		+ ELECTR. SHUTOFF
cm3/1000 strokes	:	5.0	+ CONTROL LEVER, IDLE STOP
Check tolerance			+
cm3/1000s.	:	6.0	+ Rated speed rpm : 425
Shutoff solenoid			+ Del. quantity
Volt	:	12	+ cm3/1000 strokes : 1.5
			+ Tolerance
Rated speed rpm	:	2650	+ cm3/1000 strokes : 1.5
Del. quantity			+ Check tolerance
cm3/1000 strokes	:	1.5	+ cm3/1000s. : 1.5
Tolerance			Spread
cm3/1000 strokes	:	1.5	+ cm3/1000 strokes : 5.0
Check tolerance			+
cm3/1000s.	:	1.5	→ FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid			+
Volt	:	12	Rated speed rpm : 425
			+ Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity			† Tolerance
cm3/1000 strokes	:	41.0	+ cm3/1000 strokes : 1.5
Tolerance			+ Spread
cm3/1000 strokes	:	1.0	+ cm3/1000 strokes : 5.0
Check tolerance			+ Check tolerance
cm3/1000s.	:	2.2	+ cm3/1000s. : 1.5
Shutoff solenoid			+ Spread
Volt	:	12	+ cm3/1000 strokes : 5.0
			+
Rated speed rpm	:	450	†
Del. quantity			+
cm3/1000 strokes	:	39.0	
Tolerance			+ RESIDUAL QUANTITY
cm3/1000 strokes	:	3.0	†
Check tolerance			Rated speed rpm : 515
cm3/1000s.	:	5.5	+ Del. quantity
Shutoff solenoid		10	+ cm3/1000 strokes : 6.5
Volt	:	12	+ Tolerance
~		750	- cm3/1000 strokes : 1.0
Rated speed rpm	:	750	+ Check tolerance
Del. quantity		70.5	+ cm3/1000s. : 2.5
cm3/1000 strokes	:	38.5	+ Shutoff solenoid
Tolerance		1.5	+ Volt : 12
	:	1.5	†
Check tolerance		3.0	T
cm3/1000S. Shutoff solenoid	•	3.0	CHECKING LOAD-DEPENDENT
		12	+ START OF DELIVERY
Volt	•	12	I START OF DELIVERY
Rated speed rpm	•	1250	DELIVERY DIFFERENCE
Del. quantity	•	1250	- DELIVER DITTERENTS
cm3/1000 strokes	:	40.0	Rated speed rpm : 1250
Tolerance	•		Del. quantity
cm3/1000 strokes	:	0.5	+ cm3/1000 strokes : -10.0
Check tolerance	-	-	Tolerance
cm3/1000s.	:	2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid			+ Check tolerance
Volt	:	12	+ cm3/1000s. : 4.0
			+ Shutoff solenoid
			+ Volt : 12

TIMING-DEVICE TRA	AVEL	DIFFERENCE	
Rated speed rpm	:	1250	
Del. quantity cm3/1000 strokes Tolerance	:	-1.0	
cm3/1000 strokes Check tolerance	:	0.1	
cm3/1000s. Shutoff solenoid	:	0.1	
Volt	:	12	
DELIVERY DIFFEREN	ICE		
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes Tolerance	•	5.0	
cm3/1000 strokes Check tolerance	•	3.0	
cm3/1000s. Shutoff solenoid	:	3.0	
Volt	:	12	
PRESSURE DIFFEREN	ICE		
Rated speed rpm Supply pomp	:	1250	
pressure bar Tolerance hPa	:	-0.9 0.2	
Shutoff solenoid Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	1250	
Tolerance mm Check	:	0.2	
tolerance mm Shutoff solenoid	:	0.6	
Volt	:	12	
EXHAUST-GAS RECIR	CULA	ATION	
Rated speed rpm	:	1000	
Del. quantity cm3/1000 strokes Tolerance	:	22.0	
cm3/1000 strokes Check tolerance	:	1.0	
cm3/1000S. Shutoff solenoid	:	3.0	
Volt	:	12	

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	•	35.0 10.0 12
Rated speed rpm Del. quantity	:	180
cm3/1000 strokes	:	65.0
cm3/1000 strokes Shutoff solenoid	•	25.0
Volt	:	12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 5,3
Tolerance	mm	: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm	: +-0,2

MICROSWITCH SET

mm : 0,8...3,0 : ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm : 20,0..22,0

Control lever

position YB mm : 61,5..72,5

End of test-specification sheet

START TRANSITION

Rated speed rpm : 380

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.03.96 Test oil : ISO 4113

Part no. : 0 460 494 391 Pump designation : VE4/9F2100R471-2

Customer—spec. information Customer : VW Motor : 1.9 LUD Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 147 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.9
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.6
Tolerance hPa : 0.3
Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 5.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid			+				
Volt	:	12	‡	Rated speed rpm Supply pomp	:	1700	
			+	pressure bar	:	6.9	
LOAD DEDENOTHE OF	- 4 0 7	OF DELTHERY	+	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST SETTING	ARI	OF DELIVERY	†	Shutoff solenoid Volt		12	
2E11TIAG			I	VOLE	•	12	
DELIVERY DIFFEREN	!CE		1	Rated speed rpm	:	750	
			+	Supply pomp			
Rated speed rpm	:	1250	+	pressure bar	:	4.1	
Del. quantity		-7.0	†	Tolerance hPa	:	0.3	
cm3/1000 strokes Tolerance	•	-7.0	Ī	Shutoff solenoid Volt		12	
cm3/1000 strokes	:	1.0	Ţ	VOCC	•	1 6	
Shutoff solenoid	•		<u> </u>	OVERFLOW QUANTITY			
Volt	•	12	+				
			+	Rated speed rpm		1850	
PRESSURE DIFFEREN	ICE		†	Overflow quantity		07.0	
Rated speed rpm	:	1250	Ī	ccm/10s Tolerance	:	97.2	
Del. quantity	•	1230	I	ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.2	1		•		
Tolerance			+	Check tolerance			
cm3/1000 strokes	•	0.1	+	ccm/10s	:	55.5	
Shutoff solenoid		12	†	Shutoff solenoid		43	
Volt	•	12	Ī	Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	1	Rated speed rpm	:	750	
			+	Overflow quantity			
Rated speed rpm	:	1250	+	ccm/10s	:	63.8	
Del. quantity		1.0	†	Tolerance		22.2	
cm3/1000 strokes Tolerance	·	-1.0	Ī	ccm/10s	:	22.2	
cm3/1000 strokes	:	0.1	I	Check tolerance			
Shutoff solenoid	-		+	ccm/10s	:	34.7	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
INJECTION-PUMP TE	ST	SPECIFICATIONS	I	DELIVERY AND BREAK	CAWA	Y CHADACT	EDISTIC
1140 5 0 1 1 0 1 1 1 5 1 1 1 5		5/ E01/ 10// 10//C	I	DECIVER AND DIVEN	\r\wr	II CIIANACI	EKISTIC
TIMING DEVICE CHA	RAC	TERISTIC	+	Rated speed rpm	:	2400	
		4700	+	Del. quantity			
Rated speed rpm	:	1700 0.4	†	cm3/1000 strokes	:	15.0	
Tolerance mm Check	•	0.4	Ī	Tolerance cm3/1000 strokes	:	2.0	
tolerance mm	:	0.8	I	Check tolerance	•	2.0	
Shutoff solenoid	-		+	cm3/1000s.	:	4.0	
Volt	:	12	+	Shutoff solenoid			
en a al accordance		750	†	Volt	:	12	
Rated speed rpm	•	750	1	Rated speed rpm	:	2250	
SV travel mm	:	1.5	I	Del. quantity	•	2230	
Tolerance mm		0.4	+	cm3/1000 strokes	:	29.0	
Check			+	Tolerance			
tolerance mm	:	0.8	+	cm3/1000 strokes	:	5.0	
Shutoff solenoid Volt		12	İ	Check tolerance cm3/1000s.		6.0	
VOLL	•	12	I	Shutoff solenoid	•	0.0	
SUPPLY PUMP PRESSI	JRE	CHARACTERISTIC	+	Volt	:	12	
			•				

			1 Tolorance
Rated speed rpm	:	2650	+ Tolerance + cm3/1000 strokes : 1.5
Del. quantity	•	2000	+ Check tolerance
cm3/1000 strokes	:	1.5	+ cm3/1000s. : 1.5
Tolerance			Spread
cm3/1000 strokes	:	1.5	cm3/1000 strokes : 5.0
Check tolerance		1.5	FULL LOAD STOD CONTROL LEVED
cm3/1000s. Shutoff solenoid	•	i.5	+ FULL-LOAD STOP CONTROL LEVER
Volt	•	12	Rated speed rpm : 425
VOCC	•	, _	Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity			+ Tolerance
cm3/1000 strokes	:	41.0	+ cm3/1000 strokes : 1.5
Tolerance		4.5	Spread
cm3/1000 strokes	:	1.0	cm3/1000 strokes : 5.0
Check tolerance		2.2	+ Check tolerance
cm3/1000s.	:	2.2	+ cm3/1000s. : 1.5
Shutoff solenoid Volt	•	12	+ Spread + cm3/1000 strokes : 5.0
VOLL	:	12	T cliby tood strokes: 5.0
Rated speed rpm	:	450	I
Del. quantity	•	,,,,	1
cm3/1000 strokes	:	39.0	
Tolerance			+ RESIDUAL QUANTITY
cm3/1000 strokes	*	3.0	+
Check tolerance			+ Rated speed rpm : 515
cm3/1000s.	:	5.5	+ Del. quantity
Shutoff solenoid		40	- cm3/1000 strokes : 6.5
Volt	:	12	+ Tolerance
Dadad agast was		750	+ cm3/1000 strokes : 1.0
Rated speed rpm	:	750	+ Check tolerance + cm3/1000s. : 2.5
Del. quantity cm3/1000 strokes		38.5	+ Cm3/1000s. : 2.5 + Shutoff solenoid
Tolerance	•	50.5	Volt : 12
cm3/1000 strokes	:	1.5	1
Check tolerance	•	• • =	+
cm3/1000s.	:	3.0	+
Shutoff solenoid			+ CHECKING LOAD-DEPENDENT
Volt	:	12	+ START OF DELIVERY
		4250	† NEI TUENY 2 TETET 100
Rated speed rpm	:	1250	+ DELIVERY DIFFERENCE
Del. quantity cm3/1000 strokes		40.0	Rated speed rpm : 1250
Tolerance	ě	40.0	Del. quantity
cm3/1000 strokes	•	0.5	= cm3/1000 strokes : -10.0
Check tolerance	•	J. J	Tolerance
cm3/1000s.	:	2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid	-		+ Check tolerance
Volt	:	12	+ cm3/1000s. : 4.0
			+ Shutoff solenoid
			+ Volt : 12
ELECTR. SHUTOFF		TOD	TIMING-DEVICE TRAVEL DIFFERENCE
CONTROL LEVER, ID	LE S	108	Dated speed and 1250
Dated consol		425	+ Rated speed rpm : 1250 + Del. quantity
Rated speed rpm Del. quantity	:	467	+ cm3/1000 strokes : -1.0
cm3/1000 strokes	•	1.5	Tolerance
CHID/ LOUD SELONGS	•	1.0	- cm3/1000 strokes : 0.1
			1 3/10/1000 00/01/00 1 01/1

Check tolerance 0.1 cm3/1000S.Shutoff solenoid 12 Volt DELIVERY DIFFERENCE Rated speed rpm 1250 Del. quantity 5.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000S. 3.0 Shutoff solenoid 12 Volt PRESSURE DIFFERENCE 1250 Rated speed rpm Supply pomp -0.9pressure bar 0.2 Tolerance hPa Shutoff solenoid Volt 12 TIMING-DEVICE TRAVEL DIFFERENCE 1250 Rated speed rpm 0.2 Tolerance mm Check tolerance mm 0.6 Shutoff solenoid Volt 12 EXHAUST-GAS RECIRCULATION 1000 Rated speed rpm Del. quantity cm3/1000 strokes : 22.0 Tolerance 1.0 cm3/1000 strokes : Check tolerance 3.0 cm3/1000s. Shutoff solenoid 12 Volt START TRANSITION 380 Rated speed rpm Del. quantity 35.0 cm3/1000 strokes : Tolerance cm3/1000 strokes 10.0 Shutoff solenoid 12 Volt 180 Rated speed rpm

Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid Volt 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm Tolerance mm : +-0,1 : 5,3 Dimension KF mm Tolerance mm : +-0,2 Dimension MS mm : 1,3 Tolerance mm : +-0,2

MICROSWITCH SET

: ARF 12,0

CONTROL LEVER POSITION

Control lever

position YA mm : 20,0..22,0

Control lever

position YB mm : 61,5..72,5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12,03.96 : ISO 4113 Test oil

: 0 460 494 417 Part no. Pump designation: VE4/9F2100R471-3

Customer-spec. information Customer : VW

: 1.9L UD Motor Power KW 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance *C 1

Overflow

restriction mm 0.55

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

147 bar Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1250

3.9 Setting mm • Tolerance mm 0.2 Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Setting hPa 5.6 : Tolerance hPa 0.3 : Shutoff solenoid 12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 40.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5 Shutoff solenoid

12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 550 Del. quantity

cm3/1000 strokes : 5.5

Tolerance

cm3/1000 strokes 0.5 Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

2400 Rated speed rpm Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes 2.0

Shutoff solenoid

12 Volt

STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes :

65.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid			_				
Volt	:	12	I	Rated speed rpm Supply pomp	:	1700	
			1	pressure bar	:	6.9	
			 	Tolerance hPa	:	0.3	
LOAD-DEPENDENT ST	TAR1	r OF DELIVERY	+	Shutoff solenoid			
SETTING			+	Volt	:	12	
			+			750	
DELIVERY DIFFEREN	VCE		†	Rated speed rpm	:	750	
Rated speed rpm	:	1250	Ī	Supply pomp pressure bar		4.1	
Del. quantity	•	1230	I	Tolerance hPa	:	0.3	
cm3/1000 strokes	:	-7.0	1	Shutoff solenoid	•	0.0	
Tolerance			+	Volt	:	12	
cm3/1000 strokes	:	1.0	+				
Shutoff solenoid		42	+	OVERFLOW QUANTITY			
Volt	:	12	†	Datad anned ann	_	1850	
PRESSURE DIFFEREN	ICE		Ī	Rated speed rpm Overflow quantity	:	1000	
THESSORE DITTEREN	ICL		I	ccm/10s	:	97.2	
Rated speed rpm	:	1250	1	Tolerance	•	, , , , _	
Del. quantity			+	ccm/10s	:	41.6	
cm3/1000 strokes	:	-0.2	+				
Tolerance		0.1	†	Check tolerance	_	EC	
cm3/1000 strokes Shutoff solenoid	:	0.1	†	ccm/10s Shutoff solenoid	•	55.5	
Volt	:	12	I	Volt	:	12	
1011	•		1	70(1	•		
TIMING-DEVICE TRA	VEL	DIFFERENCE	+	Rated speed rpm	:	750	
			+	Overflow quantity		(3.5	
Rated speed rpm	:	1250	†	ccm/10s	:	63.8	
Del. quantity cm3/1000 strokes		-1.0	Ī	Tolerance ccm/10s	:	22.2	
Tolerance	•	1.0	I	CCIII/ TOS	•	26.6	
cm3/1000 strokes	:	0.1	1	Check tolerance			
Shutoff solenoid			+	ccm/10s	:	34.7	
Volt	:	12	+	Shutoff solenoid		4.5	
				Volt	:	12	
INJECTION-PUMP TE	ST	SPECIFICATIONS	I	DELIVERY AND BREAK	(AWA	Y CHARACTER	ISTIC
			+				
TIMING DEVICE CHA	RAC	TERISTIC	+	Rated speed rpm	:	2400	
Dottod agend	•	1700	†	Del. quantity cm3/1000 strokes		15.0	
Rated speed rpm Tolerance mm	:	1700 0.4	I	Tolerance	:	17.0	
Check	•	0.4	1	cm3/1000 strokes	:	2.0	
tolerance mm	:	0.8	+	Check tolerance			
Shutoff solenoid			+	cm3/1000s.	:	4.0	
Volt	:	12	+	Shutoff solenoid		10	
Datad amond man		750	†	Volt	:	12	
Rated speed rpm	•	750	I	Rated speed rpm	:	2250	
SV travel mm	:	1.5	1	Del. quantity	•		
Tolerance mm	:	0.4	+	cm3/1000 strokes	:	29.0	
Check			+	Tolerance			
tolerance mm	:	0.8	†	cm3/1000 strokes	:	5.0	
Shutoff solenoid Volt		12	1	Check tolerance cm3/1000s.		6.0	
VOCC	•	16	Į	Shutoff solenoid	•	5.0	
SUPPLY PUMP PRESSI	URE	CHARACTERISTIC	+	Volt	:	12	
			•				

			+ Tolerance
Rated speed rpm	:	2650	+ cm3/1000 strokes : 1.5
Del. quantity			+ Check tolerance
cm3/1000 strokes	:	1.5	+ cm3/1000s. : 1.5
Tolerance		A =	+ Spread
cm3/1000 strokes	:	1.5	cm3/1000 strokes : 5.0
Check tolerance cm3/1000s.		1.5	FULL-LOAD STOP CONTROL LEVER
Shutoff solenoid	•	۱.۱	T FOLL-LOAD STOP CONTROL LEVER
Volt	:	12	Rated speed rpm : 425
	·	_	Del. quantity
Rated speed rpm	:	1850	+ cm3/1000 strokes : 1.5
Del. quantity			+ Tolerance
cm3/1000 strokes	:	41.0	+ cm3/1000 strokes : 1.5
Tolerance	_	1.0	+ Spread
cm3/1000 strokes Check tolerance	:	1.0	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s.		2.2	+ cm3/1000s. : 1.5
Shutoff solenoid	•	۲.۲	Spread
Volt	•	12	cm3/1000 strokes : 5.0
VOCC	•	, _	5.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3
Rated speed rpm	:	450	∔
Del. quantity		_	+
cm3/1000 strokes	:	39.0	
Tolerance			+ RESIDUAL QUANTITY
cm3/1000 strokes	:	3.0	+
Check tolerance			+ Rated speed rpm : 515
cm3/1000s.	:	5.5	+ Del. quantity
Shutoff solencid		40	+ cm3/1000 strokes : 6.5
Volt	:	12	+ Tolerance + cm3/1000 strokes : 1.0
Dated aroad nam		750	+ cm3/1000 strokes : 1.0 + Check tolerance
Rated speed rpm Del. quantity	:	750	+ cm3/1000s. : 2.5
cm3/1000 strokes	•	38.5	Shutoff solenoid
Tolerance	•	30.5	+ Volt : 12
cm3/1000 strokes	:	1.5	1
Check tolerance	•	, • •	
cm3/1000S.	:	3.0	<u> </u>
Shutoff solenoid			+ CHECKING LOAD-DEPENDENT
Volt	:	12	+ START OF DELIVERY
			+
Rated speed rpm	:	1250	+ DELIVERY DIFFERENCE
Del. quantity		40.0	1252
cm3/1000 strokes	:	40.0	+ Rated speed rpm : 1250
Tolerance		0.5	+ Del. quantity + cm3/1000 strokes : -10.0
cm3/1000 strokes Check tolerance	:	0.5	+ cms/1000 strokes : -10.0 + Tolerance
cm3/1000s.	:	2.2	+ cm3/1000 strokes : 3.0
Shutoff solenoid	•	٠.٠	Check tolerance
Volt	•	12	+ cm3/1000s. : 4.0
	•		+ Shutoff solenoid
		-	+ Volt : 12
		-	+
ELECTR. SHUTOFF			TIMING-DEVICE TRAVEL DIFFERENCE
CONTROL LEVER, ID	LE S	TOP	†
			+ Rated speed rpm : 1250
Rated speed rpm	:	425	+ Del. quantity
Del. quantity		4.5	+ cm3/1000 strokes : -1.0
cm3/1000 strokes	:	1.5	Tolerance cm3/1000 strokes : 0.1
			+ LMD/ 1000 Strokes : U.1

Check tolerance cm3/1000s. 0.1 Shutoff solenoid Volt 12 DELIVERY DIFFERENCE 1250 Rated speed rpm : Del. quantity cm3/1000 strokes : 5.0 Tolerance cm3/1000 strokes : 3.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid 12 Volt PRESSURE DIFFERENCE 1250 Rated speed rpm Supply pomp -0.9pressure bar Tolerance hPa 0.2 Shutoff solenoid 12 Volt TIMING-DEVICE TRAVEL DIFFERENCE Rated speed rpm : 1250 Tolerance mm 0.2 Check tolerance mm 0.6 : Shutoff solenoid 12 Volt EXHAUST-GAS RECIRCULATION 1000 Rated speed rpm Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : 1.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid Volt 12 START TRANSITION 380 Rated speed rpm Del. quantity cm3/1000 strokes : 35.0 Tolerance cm3/1000 strokes : 10.0 Shutoff solenoid 12 Volt

180

Del. quantity cm3/1000 strokes : 65.0 Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +-0,1
Dimension KF mm : 5,3
Tolerance mm : +-0,2
Dimension MS mm : 1,3
Tolerance mm : +-0,2

MICROSWITCH SET

mm : 0,8...3,0 : ARF 12,0

CONTROL LEVER POSITION SET

Control lever

position YA mm: 20,0..22,0

Control lever

position YB mm : 61,5..72,5

End of test-specification sheet

Rated speed rpm :

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.03.94 Test oil : ISO 4113

Part no. : 0 460 494 309 Pump designation : VE4/9F2250R472

Customer-spec. information Customer : PSA

: XUD 9 TE-Y CATA Motor

TEST BENCH REQUIREMENTS

Overflow

restriction mm 0.55 :

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,3 Tolerance mm : +-0,2

Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1500 Aneroid pressure

hPa 1000 :

Setting mm 4.1 : Tolerance mm 0.2 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1500 Aneroid pressure

1000 hPa

Setting hPa 5.7 Tolerance hPa 0.3 Shutoff solenoid

Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

12

Rated speed rpm 1250 Aneroid pressure hPa 1000 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 3.0 Shutoff solenoid

Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 500 Del. quantity cm3/1000 strokes : 37.0 Tolerance cm3/1000 strokes 0.5 Shutoff solenoid 12 Volt Check tolerance cm3/1000s. 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

490 Rated speed rpm

Del. quantity	2.5	+ Aneroid pressure	4000
cm3/1000 strokes	: 8.5	† hPa	: 1000
Tolerance	0.5	†	
cm3/1000 strokes	: 0.5	† SV travel mm	: 6.5
Shutoff solenoid		† Tolerance mm	: 0.4
Voit	: 12	Check	
		+ tolerance mm	: 0.7
FULL-LOAD SPEED R	REGULATION	+ Shutoff solenoid	4.0
	2575	→ Volt	: 12
Rated speed rpm	: 2575	†	222
Pressure hPa	: 1000	+ Rated speed rpm	: 900
Del. quantity	44.0	+ Aneroid pressure	4000
cm3/1000 strokes	: 14.0	† hPa	: 1000
Tolerance	. 2.0	† OV 455 51 55	
cm3/1000 strokes	: 2.0	+ SV travel mm	: 1.2
Shutoff solenoid	: 12	† Tolerance mm	: 0.4
Volt	; 12	Check	. 0.7
CTARTING CUEL NEW	THEON	+ tolerance mm	: 0.7
STARTING FUEL DEL	LIVERT	+ Shutoff solenoid	: 12
Dated and all and	. 450	† Volt	: 12
Rated speed rpm	: 150	CURRLY DUMP POECE	UDE CUADACTEDICTIC
Del. quantity cm3/1000 strokes	: 52.0	T SUPPLY PUMP PRESSI	URE CHARACTERISTIC
	: 52.0	T Poted speed non	: 2000
Tolerance cm3/1000 strokes	: 15.0	+ Rated speed rpm + Aneroid pressure	: 2000
Shutoff solenoid	: 15.0	+ hPa	: 1000
	: 12		: 1000
Volt	: 12	Supply pomp	: 6.8
SET GRADUATED STA	ADTING DELIVEDY	+ pressure bar + Tolerance hPa	: 0.3
		+ Shutoff solenoid	: 0.5
CONTROL LEVER, ID	DLE STOP	+ Volt	: 12
Rated speed rpm	: 200	T	: 12
Del. quantity	. 200	Rated speed rpm	: 900
cm3/1000 strokes	: 53.0	+ Aneroid pressure	. 700
Tolerance	. 55.0	+ hPa	: 1000
cm3/1000 strokes	: 3.0	Supply pomp	. 1000
Shutoff solenoid	. 3.0	pressure bar	: 4.2
Volt	: 12	+ Tolerance hPa	: 0.3
VOCE		+ Shutoff solenoid	. 0.5
		+ Volt	: 12
LOAD-DEPENDENT ST	ART OF DELIVERY	1	
SETTING	7111 01 2001210111	OVERFLOW QUANTITY	
TIMING-DEVICE TRA	VEL DIFFERENCE	Rated speed rpm	: 2150
V4.12.10 V4.14.1		- Aneroid pressure	
Rated speed rpm	: 1500	+ hPa	: 1000
Del. quantity		+ Overflow quantity	
cm3/1000 strokes	: 2.6	+ ccm/10s	: 97.2
Tolerance		Tolerance	
cm3/1000 strokes	: 0.1	+ ccm/10s	: 41.6
Shutoff solenoid		+	
Volt	: 12	+ Check tolera	
		+ ccm/10s	: 41.6
		+ Shutoff solenoid	
INJECTION-PUMP TE	ST SPECIFICATIONS	+ Volt	: 12
		+	
TIMING DEVICE CHAP	RACTERISTIC	+ Rated speed rpm	: 500
		+ Aneroid pressure	
Rated speed rpm	: 2000	† hPa	: 1000
		+	

Overflow quantity ccm/10s	y : 63.8	Rated speed rpm Aneroid pressure	:	2150
Tolerance	: 22.2	hPa Del. quantity	:	1000
Check tolerance		cm3/1000 strokes Tolerance	:	50.1
ccm/10s Shutoff solenoid	: 22.2		:	1.0
Volt	: 12	cm3/1000s. Shutoff solenoid	:	2.2
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	+ Volt	:	12
Rated speed rpm Aneroid pressure	: 2575	Rated speed rpm Aneroid pressure	:	2000
hPa	: 1000	+ hPa	:	1000
Del. quantity cm3/1000 strokes	: 14.0	Del. quantity cm3/1000 strokes	:	52.0
Tolerance cm3/1000 strokes Check tolerance	: 2.0	Tolerance cm3/1000 strokes Check tolerance	:	1.0
cm3/1000s. Shutoff solenoid	: 4.0	cm3/1000s. Shutoff solenoid	:	2.2
Volt	: 12	+ Volt	:	12
Rated speed rpm Aneroid pressure	: 2375	Rated speed rpm Aneroid pressure	:	500
hPa	: 1000	+ hPa	:	1000
Del. quantity cm3/1000 strokes	: 39.0	+ Del. quantity + cm3/1000 strokes + Tolerance	:	48.3
Tolerance cm3/1000 strokes Check tolerance	: 5.0	- cm3/1000 strokes - Check tolerance	:	1.5
cm3/1000s.	: 6.0	- cm3/1000s. - Shutoff solenoid	•	3.0
Shutoff solenoid Volt	: 12	+ Volt	:	12
Rated speed rpm	: 2750	Rated speed rpm Aneroid pressure	:	1250
Aneroid pressure	: 1000	hPa Del. quantity	:	1000
Del. quantity cm3/1000 strokes Tolerance	: 3.0	cm3/1000 strokes	:	54.0
cm3/1000 strokes Check tolerance	: 3.0	cm3/1000 strokes Check tolerance	:	0.5
cm3/1000s. Shutoff solenoid	: 3.0	cm3/1000s. Shutoff solenoid	:	2.2
Volt	: 12	Volt	:	12
Rated speed rpm Aneroid pressure	: 750	MECHANICAL SHUTOF		
hPa Del. quantity	: 350	Rated speed rpm	:	2000
cm3/1000 strokes Tolerance	: 46.0	Aneroid pressure	•	1000
cm3/1000 strokes Check tolerance	: 0.5	Del. quantity cm3/1000 strokes		1.5
cm3/1000s. Shutoff solenoid	: 3.0	Tolerance cm3/1000 strokes		1.5
Volt	: 12	Check tolerance cm3/1000s.	:	1.5
		[(1137 10000)	•	1.0

Shutoff solenoid Volt	:	12	
ELECTR. SHUTOFF CONTROL LEVER, ID	LE :	STOP	
Rated speed rpm Del. quantity	:	400	
cm3/1000 strokes Tolerance	:	1.5	
cm3/1000 strokes Check tolerance	:	1.5	
cm3/1000s.	:	1.5	
CHECKING LOAD-DEP		ENT	
DELIVERY DIFFEREN	CE		
Rated speed rpm Del. quantity	:	1500	
cm3/1000 strokes Tolerance	:	35.0	
cm3/1000 strokes Check tolerance	:	1.0	
cm3/1000s. Shutoff solenoid	:	4.5	
Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm Del. quantity	:	1500	
cm3/1000 strokes Tolerance	:	2.6	
cm3/1000 strokes Check tolerance	:	0.1	
cm3/1000S. Shutoff solenoid	:	0.1	
Volt	:	12	
DELIVERY DIFFEREN	CE		
Rated speed rpm Del. quantity	:	1500	
cm3/1000 strokes Tolerance	:	5.0	
cm3/1000 strokes	:	3.0	
Check tolerance		7.0	
cm3/1000S. Shutoff solenoid	:	3.0	

PRESSURE DIFFERENCE

kated speed rpm	:	1500
Supply pomp		
pressure bar	:	4.5
Tolerance hPa	:	0.6
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm Tolerance mm	:	1500 0.7
Check tolerance mm Shutoff solenoid	:	0.8
Volt	:	12

START TRANSITION

Rated speed rpm	:	380
Del. quantity cm3/1000 strokes	:	35.0
Tolerance cm3/1000 strokes	:	10.0
Shutoff solenoid		12
VOLT	:	12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension	K mm	: 3,3
Tolerance	mm	: +-0,1
Dimension	KF mm	: 6,0
Tolerance		: +-0,2
Dimension	MS mm	: 1,3
Tolerance	mm	: +-0,2

CONTROL LEVER POSITION SET

position YA mm	: 18,822,8

Control lever position YB mm : 78,0..92,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.03.94 : ISO 4113 Test oil

: 0 460 494 344 Part no. Pump designation: VE4/9F2250R472-1

Customer-spec. information

: PSA Customer

Motor : XUD 9 TE-Y

TEST BENCH REQUIREMENTS

Overflow

0.55 restriction mm :

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 Tolerance bar 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00 x length mm 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 0,3 Tolerance mm : +-0,02 : A

Outlet

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rpm

Aneroid pressure

hPa 1000

4.1 Setting mm Tolerance mm 0.2

Shutoff solenoid

12 Volt

SUPPLY PUMP PRESSURE

1500 Rated speed rpm Aneroid pressure

hPa

1000 Setting hPa 5.7

Tolerance hPa 0.3 Shutoff solenoid

12 Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1250 Aneroid pressure

1000 hPa Del. quantity

cm3/1000 strokes : 54.0 Tolerance

cm3/1000 strokes : 0.5

Spread cm3/1000 strokes : 2.0

Check tolerance cm3/1000s. 3.0

Shutoff solenoid

Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm 500 Del. quantity

cm3/1000 strokes : 37.0

Tolerance

cm3/1000 strokes 0.5 Shutoff solenoid

Volt Check tolerance

cm3/1000s. 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 490

Del. quantity		٥. ٦	†	Aneroid pressure		4000
cm3/1000 strokes	;	8.5	†	hPa	:	1000
Tolerance cm3/1000 strokes		0.5	Ī	SV travel mm		6.5
Shutoff solenoid	•	0.5	I	Tolerance mm	•	0.4
Volt	:	12	1	Check	•	0. (
	•		+	tolerance mm	:	0.7
FULL-LOAD SPEED R	EGUL	ATION	+	Shutoff solenoid		
			+	Volt	:	12
Rated speed rpm	:	2575	+			400
Pressure hPa	:	1000	+	Rated speed rpm	:	900
Del. quantity		1/ 0	†	Aneroid pressure		1000
cm3/1000 strokes	:	14.0	Ť	hPa	:	1000
Tolerance cm3/1000 strokes		2.0	Ī	SV travel mm		1.2
Shutoff solenoid	•	2.0	I	Tolerance mm	•	0.4
Volt	•	12	I	Check	•	0.4
1011	•		1	tolerance mm	:	0.7
STARTING FUEL DEL	IVER	Y	ļ	Shutoff solenoid	-	
			+	Volt	:	12
Rated speed rpm	:	150	+			
Del. quantity			+	SUPPLY PUMP PRESSI	URE	CHARACTERISTIC
cm3/1000 strokes	:	52.0	+			222
Tolerance		45.0	†	Rated speed rpm	:	2000
cm3/1000 strokes Shutoff solenoid	:	15.0	†	Aneroid pressure hPa		1000
Volt		12	I	Supply pomp	:	1000
VOCE	•	12	I	pressure bar		6.8
SET GRADUATED STA	RTTN	G DELIVERY	1	Tolerance hPa	:	0.3
CONTROL LEVER, ID			1	Shutoff solenoid	·	
		. •	+	Volt	:	12
Rated speed rpm	:	200	+			
Del. quantity			+	Rated speed rpm	:	900
cm3/1000 strokes	:	53.0	†	Aneroid pressure		4000
Tolerance		7 O	†	hPa	:	1000
cm3/1000 strokes Shutoff solenoid	:	3.0	Ī	Supply pomp pressure bar		4.2
Volt	•	12	I	Tolerance hPa	:	0.3
VOCC	•	12	I	Shutoff solenoid	•	0.5
			1	Volt	:	12
LOAD-DEPENDENT ST.	ART	OF DELIVERY	1			
SETTING			+	OVERFLOW QUANTITY		
			+			
TIMING-DEVICE TRA	VEL	DIFFERENCE	t	Rated speed rpm	:	2150
~		4500	†	Aneroid pressure		1000
Rated speed rpm	:	1500	Ť	hPa	:	1000
Del. quantity cm3/1000 strokes		2.6	Ī	Overflow quantity ccm/10s		97.2
Tolerance	•	2.0	I	Tolerance	•	71.6
cm3/1000 strokes	•	0.1	1	ccm/10s	:	41.6
Shutoff solenoid	•		1		-	
Volt	:	12	Ť	Check tolerance		
			÷	ccm/10s	:	41.6
			- †	Shutoff solenoid		
INJECTION-PUMP TE	ST S	PECIFICATIONS	†	Volt	:	12
TIMING NEUTCE CHA	3 A C T	EDICTIC	†	Pated speed spe	:	500
TIMING DEVICE CHAP	TAUII	EKTOITC	Ī	Rated speed rpm Aneroid pressure	•	Juu
Rated speed rpm	:	2000	Ţ	hPa	:	1000
nated speed ipili	•	2300	\$		•	. 555

Overflow quantity	<i>,</i>	+	Rated speed rpm	:	2150
ccm/10s Tolerance	: 63.8	+	Aneroid pressure	:	1000
ccm/10s	: 22.2	Ì	Del. quantity cm3/1000 strokes	•	50.1
Check tolerance	. 22.2	+	Tolerance		1.0
ccm/10s Shutoff solenoid	: 22.2	Ŧ	cm3/1000 strokes Check tolerance	•	
Volt	: 12	‡	cm3/1000S. Shutoff solenoid	:	2.2
DELIVERY AND BREA	AKAWAY CHARACTERISTIC	‡	Volt	:	12
Rated speed rpm Aneroid pressure	: 2575	1	Rated speed rpm Aneroid pressure	:	2000
hPa Del. quantity	: 1000	+	hPa Del. quantity	:	1000
cm3/1000 strokes	: 14.0	Ŧ	cm3/1000 strokes	:	52.0
Tolerance cm3/1000 strokes	: 2.0	Ŧ	Tolerance cm3/1000 strokes	:	1.0
Check tolerance cm3/1000s.	: 4.0	‡	Check tolerance cm3/1000s.	:	2.2
Shutoff solenoid Volt	: 12	‡	Shutoff solenoid Volt	:	12
Rated speed rpm	: 2375	1	Rated speed rpm	:	500
Aneroid pressure	: 1000	$\frac{1}{1}$	Aneroid pressure hPa	•	1000
Del. quantity cm3/1000 strokes		+	Del. quantity cm3/1000 strokes	•	48.3
Tolerance		Ŧ	Tolerance		
cm3/1000 strokes Check tolerance	: 5.0	+	cm3/1000 strokes Check tolerance	:	1.5
cm3/1000s. Shutoff solenoid	: 6.0	‡	cm3/1000s. Shutoff solenoid	:	3.0
Volt	: 12	‡	Volt	:	12
Rated speed rpm Aneroid pressure	: 2750	<u>†</u>	Rated speed rpm Aneroid pressure	:	1250
hPa Del. quantity	: 1000	+	hPa Del. quantity	:	1000
cm3/1000 strokes	: 3.0	Ŧ	cm3/1000 strokes	:	54.0
Tolerance cm3/1000 strokes	: 3.0	Ŧ	Tolerance cm3/1000 strokes	:	0.5
Check tolerance cm3/1000s.	: 3.0	‡	Check tolerance cm3/1000S.	:	2.2
Shutoff solenoid Volt	: 12	‡	Shutoff solenoid Volt	:	12
Rated speed rpm	: 750	‡			
Aneroid pressure	: 350	Ì	MECHANICAL SHUTOF	F	
Del. quantity cm3/1000 strokes		<u> </u>	Rated speed rpm Aneroid pressure	:	2000
Tolerance		+	hPa Del. quantity	:	1000
cm3/1000 strokes Check tolerance		Ŧ	cm3/1000 strokes	:	1.5
cm3/1000s. Shutoff solenoid	: 3.0	‡	Tolerance cm3/1000 strokes	:	1.5
Volt	: 12	‡	Check tolerance cm3/1000s.	:	1.5
		*			

Shutoff solenoid Volt	: 12	PRESSURE DIFFERENCE
		Rated speed rpm : 1500
ELECTR. SHUTOFF	-	Supply pomp
CONTROL LEVER, I		Supply pomp pressure bar : 4.5 Tolerance hPa : 0.6
	•	Tolerance hPa : 0.6
Rated speed rpm	: 400	Shutoff solenoid
Del. quantity	•	Volt : 12
cm3/1000 strokes	: 1.5	
Tolerance	-	TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes	: 1.5 -	
Check tolerance		Rated speed rpm : 1500
cm3/1000s.	: 1.5	Tolerance mm : 0.7
	•	Check
	•	tolerance mm : 0.8
	-	Shutoff solenoid
	·	Volt : 12
	-	
	-	
		START TRANSITION
CHECKING LOAD-DE	PENDENT -	-
START OF DELIVER		Rated speed rpm : 380
	-	Del. quantity
DELIVERY DIFFERE	NCE -	cm3/1000 strokes : 35.0
	-	Tolerance
Rated speed rpm	: 1500 -	cm3/1000 strokes : 10.0
Del. quantity	-	Shutoff solenoid
cm3/1000 strokes	: 35.0	+ Volt : 12
Tolerance	-	
cm3/1000 strokes	: 1.0	-
Check tolerance		
cm3/1000s.		ASSEMBLY AND ADJUSTMENT DIMENSIONS
Shutoff solenoid		
Volt	: 12 -	Dimension K mm : 3,3
7-11-110 h-11-15-7-7-1	AVEL STEEDENSE	Tolerance mm : +-0,1
TIMING-DEVICE TRA	AVEL DIFFERENCE	Dimension KF mm : 6,0
Data damand man	. 1500	- Tolerance mm : +-0,2 - Dimension MS mm : 1,3
Rated speed rpm	: 1500	Tolerance mm : +-0,2
Del. quantity cm3/1000 strokes	: 2.6	roterance man . 1-0,2
Tolerance]	
cm3/1000 strokes	: 0.1	
Check tolerance		CONTROL LEVER POSITION
cm3/1000s.	: 0.1	- SET
Shutoff solenoid	1	
Volt	: 12	
	-	Control lever
DELIVERY DIFFEREN	VCE +	position YA mm : 28,832,8
	4	
	: 1500	- Control lever
Del. quantity		position YB mm : 68,082,0
cm3/1000 strokes	: 5.0	
Tolerance	7.0	-
cm3/1000 strokes	: 3.0	
Check tolerance	. 30	End of topt_appoidingtion chart
cm3/1000s.	: 3.0	- End of test-specification sheet
Shutoff solenoid	: 12	-
Volt	· 12	_
	Т	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.06.95 Edition : ISO 4113 Test oil

: 0 460 494 419 Part no. Pump designation: VE4/9F2050R476-1

Customer-spec. information

: IVECO-SOFIM Customer Motor : 8140.97.2500 Power KW 85.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 45 Tolerance °C 1

Overflow

restriction mm 0.75

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar 3 Tolerance bar

: 1 680 750 073 Test lines

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm 450 :

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2 Tolerance mm : +-0,02

Check

tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1400 Rated speed rpm

Aneroid pressure

hPa 1000

Setting mm 6.0 Tolerance mm 0.2

Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

1400 Rated speed rpm

Aneroid pressure

1000 hPa

Setting hPa 6.4 Tolerance hPa 0.3

Shutoff solenoid

12 Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1200 Aneroid pressure

1000 hPa

Del. quantity cm3/1000 strokes : 68.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.3.0

Shutoff solenoid

12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

500 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 42.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt 12

Check tolerance

3.0 cm3/1000s. :

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HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm	:	550
Del. quantity		
cm3/1000 strokes	:	3.0
Tolerance		
cm3/1000 strokes	:	2.5
Shutoff solenoid		
Volt	:	12

FULL-LOAD SPEED REGULATION

Rated speed rpm	:	2400
Pressure hPa	:	1000
Del. quantity		
cm3/1000 strokes	:	38.0
Tolerance		
cm3/1000 strokes	:	3.0
Shutoff solenoid		
Volt	:	12

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm3/1000 strokes	:	62.0
Tolerance		
cm3/1000 strokes	:	12.0
Shutoff solenoid		
Volt	:	12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

:	1000
:	1000
:	-20.0
:	1.0
:	12
	•

PRESSURE DIFFERENCE

Rated speed rpm	:	1000
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes		-0.2
Tolerance	•	
cm3/1000 strokes Shutoff solenoid	:	0.1
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1000
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes		~0.8
Tolerance	•	
cm3/1000 strokes Shutoff solenoid	:	0.1
Volt	:	12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

	speed rpm		1800	
hPa	oid pressur	e :	1000	
	avel mm	•	8.7 0.4	
toler	ance mm	.1	0.7	
Volt	off solenoi	a ;	12	
	speed rpm		1000	
hPa	oid pressur	e :	1000	
Tolera	avel mm ance mm	:	3.0 0.4	
	ance mm		0.7	
Volt	ff solenoi	a :	12	
	speed rpm	:	2050	
hPa	id pressure	:	1000	
Toler		*	10.0 0.4	
	ance mm	:	0.7	
Shuto Volt	ff solenoid	:	12	
	speed rpm		1400	
Anero hPa	id pressure	:	1000	
SUPPL	Y PUMP PRES	SSURE	CHARACTER	[ST]

IC

Rated speed rpm	:	2050
Aneroid pressure		
hPa	:	1000

Supply pomp pressure bar Tolerance hPa	: 8.7 : 0.3		‡	Shutoff solenoid Volt	:	12
Shutoff solenoid Volt	: 12		+	Rated speed rpm Aneroid pressure	:	2750
Rated speed rpm	: 600		<u> </u>	hPa Del. quantity	:	1000
Aneroid pressure			+	cm3/1000 strokes	:	1.5
hPa Supply pomp	: 1000	-	Ŧ	Tolerance cm3/1000 strokes	:	1.5
pressure bar Tolerance hPa	: 3.4 : 0.3		‡	Check tolerance cm3/1000s.	:	1.5
Shutoff solenoid Volt	: 12	-	Ì	Shutoff solenoid Volt	•	12
	• ''_	-	+		•	
OVERFLOW QUANTITY		-	‡	Rated speed rpm Aneroid pressure	:	600
Rated speed rpm Overflow quantity	: 500	-	‡	hPa	:	350
ccm/10s Tolerance	: 111.1		Ì	LDA/ HBA stroke mm	:	5.0
ccm/10s	: 22.2	-	+	Del. quantity		
Check tolerance		-	-	cm3/1000 strokes Tolerance		48.0
ccm/10s Shutoff solenoid	: 22.2	-	‡	cm3/1000 strokes Check tolerance	:	0.5
Volt	: 12	-	Ì	cm3/1000s. Shutoff solenoid	:	2.5
Rated speed rpm Aneroid pressure	: 2050		Ì	Volt	:	12
hPa	: 1000	-	+	Rated speed rpm	:	2050
Overflow quantity ccm/10s	: 138.8	- -	F	Aneroid pressure hPa	:	1000
Tolerance ccm/iOs	: 41.6	-	+	Del. quantity cm3/1000 strokes	:	69.5
Check tolerance		-	<u> </u>	Tolerance cm3/1000 strokes	:	1.5
ccm/10s Shutoff solenoid	: 41.6	-		Check tolerance cm3/1000s.		2.2
Volt	: 12	-	-	Shutoff solenoid	•	
DELIVERY AND BREAK	KAWAY CHARACT	ERISTIC -	F	Volt	•	12
Rated speed rpm	: 2400	4	_	Rated speed rpm Aneroid pressure	:	1950
Aneroid pressure	: 1000	-		hPa Del. quantity	:	1000
Del. quantity		-		cm3/1000 strokes Tolerance	:	69.0
cm3/1000 strokes Tolerance		-		cm3/1000 strokes	:	1.5
cm3/1000 strokes Check tolerance	: 3.0	1	-	Shutoff solenoid Volt	:	12
cm3/1000S. Shutoff solenoid	: 4.0	4		Rated speed rpm	:	600
Volt	: 12	-	L	Aneroid pressure hPa		1000
Rated speed rpm	: 2600		ļ.,	Del. quantity	•	
Aneroid pressure hPa	: 1000	1	-	Tolerance	:	55.5
Del. quantity cm3/1000 strokes	: 7.0	+	-	cm3/1000 strokes	:	2.0

Shutoff solenoid Volt	: 12	+ Shutoff solenoid Volt : 12
Rated speed rpm Aneroid pressure	: 1200	CHECKING LOAD-DEPENDENT
hPa Del. quantity	: 1000	START OF DELIVERY
cm3/1000 strokes Tolerance	: 68.0	DELIVERY DIFFERENCE
cm3/1000 strokes Check tolerance	: 0.5	Rated speed rpm : 1000 Aneroid pressure
cm3/1000s.	: 2.0	+ hPa : 1000 + Del. quantity
Shutoff solenoid Volt	: 12	- cm3/1000 strokes : -22.0 - Tolerance
		cm3/1000 strokes : 3.0 Check tolerance
ELECTR. SHUTOFF CONTROL LEVER, ID	N E STAD	cm3/1000s. : 4.0 Shutoff solenoid
COMINOT FEVERY TO	DLE STOP	+ Volt : 12
Rated speed rpm Del. quantity	: 425	+ TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes Tolerance	: 1.5	Rated speed rpm : 1000
cm3/1000 strokes Check tolerance	: 1.5	Aneroid pressure hPa : 1000
cm3/1000s.	: 1.5	+ Del. quantity + cm3/1000 strokes : -0.8
FULL-LOAD STOP CO	NTROL LEVER	Tolerance cm3/1000 strokes : 0.1
Rated speed rpm Del. quantity	: 425	Check tolerance cm3/1000s. : 0.1
cm3/1000 strokes	: 1.5	+ Shutoff solenoid
Tolerance cm3/1000 strokes	: 1.5	+ Volt : 12
Check tolerance cm3/1000s.	: 1.5	+ DELIVERY DIFFERENCE
Cm3/10003.	: 1.3	T Rated speed rpm : 1000 Aneroid pressure
		+ hPa : 1000 - Del. quantity
RESIDUAL QUANTITY		- cm3/1000 strokes : 5.0
Rated speed rpm	: 900	+ Check tolerance cm3/1000s. : 1.0
Del. quantity cm3/1000 strokes	: 1.0	Shutoff solenoid Volt : 12
Tolerance cm3/1000 strokes	: 1.0	TIMING-DEVICE TRAVEL DIFFERENCE
Shutoff solenoid Volt	: 12	Rated speed rpm : 1000
Th. 7		Aneroid pressure hPa : 1000
IDLE DELIVERY	. 75	+ Check + tolerance mm : 0.4
Rated speed rpm Del. quantity		Shutoff solenoid Volt : 12
cm3/1000 strokes Tolerance		
cm3/1000 strokes	: 3.0	EXHAUST-GAS RECIRCULATION

Del. quantity cm3/1000 strokes	: 10	00	
	:	23.0	
Tolerance cm3/1000 strokes	:	1.0	
Check tolerance cm3/1000s.	:	2.5	
Shutoff solenoid Volt	:	12	
START TRANSITION			
Rated speed rpm Del. quantity	: 3	50	
cm3/1000 strokes Tolerance	:	42.0	
cm3/1000 strokes Shutoff solenoid	•	6.0	
Volt	•	12	
Rated speed rpm	: 20	00	
Del. quantity cm3/1000 strokes	:	52.0	
Tolerance cm3/1000 strokes	:	12.0	
Shutoff solenoid Volt	:	12	
LDA/ HBA stroke mm Dimension KF mm Tolerance mm	: : 5,8 : +-0,; : 1,3		
Dimension MS mm Tolerance mm	: +-0,		
Dimension MS mm			
Dimension MS mm Tolerance mm KSB travel mm POTENTIOMETER SET 1. measurement voltage Volt	: +-0,		
Dimension MS mm Tolerance mm KSB travel mm POTENTIOMETER SET 1. measurement	: +-0,7 : 13,0		
Dimension MS mm Tolerance mm KSB travel mm POTENTIOMETER SET 1. measurement voltage Volt 1. measurement	: +-0,7 : 13,0		
Dimension MS mm Tolerance mm KSB travel mm POTENTIOMETER SET 1. measurement voltage Volt 1. measurement voltage Volt MICROSWITCH	: +-0,7 : 13,0		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.04.95 Test oil : ISO 4113

Part no. : 0 460 494 332 Pump designation : VE4/9F2400R486

Customer—spec. information Customer : RENAULT Motor : G8T - 790 Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0 Tolerance mm : +-0,02

Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.2 Tolerance hPa : 0.3 Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 37.4

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450 Del. quantity

bet. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt : 12

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STARTING FUEL DEL	.IVERY	1	‡	Tolerance mm Check	:	0.4
Rated speed rpm Del. quantity	:	100	1	tolerance mm Shutoff solenoid	:	0.6
cm3/1000 strokes Tolerance	:	60.0	Ì	Volt	:	12
cm3/1000 strokes Shutoff solenoid		15.0	ł	Rated speed rpm	:	750
Volt	:	12	1	SV travel mm Tolerance mm	:	1.0 1.2
			<u> </u>	Check tolerance mm	:	1.2
LOAD-DEPENDENT ST SETTING	ART C	OF DELIVERY	‡	Shutoff solenoid Volt	:	12
DELIVERY DIFFEREN	ICE		<u> </u>	KSB/AFB Volt	:	12
•		4250	+			
Rated speed rpm Del. quantity			‡	SUPPLY PUMP PRESS		
cm3/1000 strokes Tolerance	:	-7.1	‡	Rated speed rpm Supply pomp	•	2000
cm3/1000 strokes	•	1.0	+	pressure bar	:	8.2
Shutoff solenoid Volt		12	İ	Tolerance hPa Shutoff solenoid	:	0.3
VOCE	•	12	Ţ	Volt	:	12
PRESSURE DIFFEREN	CE		+			
Rated speed rpm	:	1250	‡	Rated speed rpm Supply pomp	:	750
Del. quantity	•		1	pressure bar	:	4.7
cm3/1000 strokes	•	-0.2	+	Tolerance hPa	:	0.3
Tolerance cm3/1000 strokes		0.1	İ	Shutoff solenoid Volt		12
Shutoff solenoid	•	0.1	Ţ	VOCE	•	12
Volt	:	12	‡	OVERFLOW QUANTITY		
TIMING-DEVICE TRA	VEL D	IFFERENCE	‡	Rated speed rpm Overflow quantity		2300
Rated speed rpm Del. quantity	:	1250	+	ccm/10s Tolerance	:	97.2
cm3/1000 strokes Tolerance	:	-0.8	<u> </u>		:	41.6
cm3/1000 strokes	:	0.1	+	Check tolerance		14 1
Shutoff solenoid Volt	:	12	‡	ccm/10s Shutoff solenoid	•	41.6
			‡	Volt	:	12
INJECTION-PUMP TE	ST SP	ECIFICATIONS	‡	Rated speed rpm Overflow quantity	:	750
TIMING DEVICE CHAP	RACTE	RISTIC	<u> </u>	ccm/10s Tolerance	:	63.8
Rated speed rpm	:	2000	+	ccm/10s	:	22.2
Tolerance mm	:	0.4	+			
Check tolerance mm	•	0.6	İ	Check tolerance ccm/10s	•	22.2
Shutoff solenoid	•	0.0	Ţ	Shutoff solenoid	•	tur tur + tur
Volt	:	12	+	Volt	:	12
Rated speed rpm	:	1000	Ī	DELIVERY AND BREAK	<awa< td=""><td>Y CHARACTERISTIC</td></awa<>	Y CHARACTERISTIC
SV travel mm	:	1.0	Ţ	Rated speed rpm	:	2600

Del. quantity			+	Del. quantity			
cm3/1000 strokes Tolerance	:	23.0	1	cm3/1000 strokes Tolerance	:	36.5	
cm3/1000 strokes Check tolerance	:	3.0	<u> </u>	cm3/1000 strokes Check tolerance	:	1.5	
cm3/1000s.	:	4.0	Ŧ	cm3/1000s.		2.3	
Shutoff solenoid Volt	:	12	‡	Shutoff solenoid Volt	:	12	
Rated speed rpm	:	2500	‡	Rated speed rpm	:	1250	
Del. quantity cm3/1000 strokes	:	35.5	‡	Del. quantity cm3/1000 strokes	:	37.4	
Tolerance cm3/1000 strokes	:	4.0	‡	Tolerance cm3/1000 strokes	:	0.5	
Check tolerance cm3/1000s.	:	5.0	‡	Check tolerance cm3/1000s.	:	2.3	
Shutoff solenoid Volt	:	12	‡	Shutoff solenoid Volt	:	12	
Rated speed rpm	:	2800	‡				
Del. quantity cm3/1000 strokes	:	2.5	‡	ELECTR. SHUTOFF			
Tolerance cm3/1000 strokes	:	2.5	‡	CONTROL LEVER, ID	LE :		
Check tolerance cm3/1000s.	:	2.5	‡	Rated speed rpm Del. quantity	:	385	
Shutoff solenoid Volt	:	12	1	cm3/1000 strokes Tolerance	:	1.5	
Rated speed rpm	•		1	cm3/1000 strokes Check tolerance	:	1.5	
Del. quantity cm3/1000 strokes		41.0	<u> </u>	cm3/1000s. Spread	:	1.5	
Tolerance cm3/1000 strokes		1.0	1	cm3/1000 strokes	:	5.0	
Check tolerance cm3/1000s.		2.3	Ŧ	FULL-LOAD STOP CO	NTRO	DL LEVER	
Shutoff solenoid	:		Ŧ	Rated speed rpm	:	385	
Volt		12	‡	Del. quantity cm3/1000 strokes	:	1.5	
Rated speed rpm Del. quantity	:	1000	‡	Tolerance cm3/1000 strokes	:	1.5	
cm3/1000 strokes Tolerance			‡	Spread cm3/1000 strokes	:	5.0	
cm3/1000 strokes Check tolerance	:	1.5	‡	Check tolerance cm3/1000s.	:	1.5	
cm3/1000s. Shutoff solenoid	:	2.3	‡	Spread cm3/1000 strokes	:	5.0	
Volt	:	12	‡				
Rated speed rpm Del. quantity	:	2000	‡				
cm3/1000 strokes Tolerance	:	40.3	‡			<u>-</u>	
cm3/1000 strokes Check tolerance	:	1.0	‡	CHECKING LOAD-DEP START OF DELIVERY		ENT	
cm3/1000s. Shutoff solenoid	:	2.3	<u> </u>	DELIVERY DIFFEREN			
Volt	:	12	‡		:	1250	
Rated speed rpm	:	750	+	opeca (piii	•	. 2.30	

Del. quantity		
cm3/1000 strokes	:	-9.4
Tolerance		
cm3/1000 strokes	:	2.0
Check tolerance		
cm3/1000s.	:	2.0
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	-0.8
Tolerance cm3/1000 strokes	:	0.1
Check tolerance cm3/1000s.	:	0.1
Shutoff solenoid Volt	:	12

DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity cm3/1000 strokes	:	5.0
Tolerance cm3/1000 strokes	•	3.0
Check tolerance	•	3.0
cm3/1000S. Shutoff solenoid	:	3.0
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Tolerance mm	:	0.2
Check		
tolerance mm	•	0.3
Shutoff solenoid		
Volt		12

EXHAUST-GAS RECIRCULATION

Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes	:	23.0	
Tolerance cm3/1000 strokes	:	0.5	
Check tolerance cm3/1000s.	:	2.5	
Shutoff solenoid Volt	:	12	

START TRANSITION

Rated speed rpm	:	350
Del. quantity		
cm3/1000 strokes	•	30.1

cm3/1000 strokes : 30.0

Tolerance

cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200 Del. quantity

Del. quantity cm3/1000 strokes : 70.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

K mm	: 3,7
កាកា	: +-0,1
KF mm	: 6,0
mm	: +-0,2
MS mm	: 0,9
mm	: +-0,2
	mm KF mm mm MS mm

MICROSWITCH

SET

mm : 0,8...3,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25.04.95 Edition Test oil : ISO 4113

Part no. : 0 460 494 333 Pump designation : VE4/9F2400R486-1

Customer-spec. information Customer : RENAULT : G8T - 790 CA Motor Power KW 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C 45 Tolerance °C

Overflow

0.55 restriction mm

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter : x length mm 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm: 1,0 Tolerance mm : +-0,02 Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1250

Setting mm 2.5 Tolerance mm 0.2 Shutoff solenoid

Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm 1250

Setting hPa 6.2 Tolerance hPa 0.3 Shutoff solenoid Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity cm3/1000 strokes : 37.4 Tolerance

cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 2.5 Shutoff solenoid

12 Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 450 Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

Rated speed rpm 2600 Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt 12

STARTING FUEL DEL	IVERY	† Tolerance mm : 0.4 † Check
Rated speed rpm Del. quantity	: 100	tolerance mm : 0.6 Shutoff solenoid
cm3/1000 strokes Tolerance	: 60.0	Volt : 12
cm3/1000 strokes Shutoff solenoid	: 15.0	Rated speed rpm : 750
Volt	: 12	SV travel mm : 1.0 Tolerance mm : 1.2
		Check tolerance mm : 1.2
LOAD-DEPENDENT ST SETTING	ART OF DELIVERY	Shutoff solenoid Volt : 12
DELIVERY DIFFEREN	ICE	+ + KSB/AFB Volt : 12
Rated speed rpm	: 1250	SUPPLY PUMP PRESSURE CHARACTERISTIC
Del. quantity cm3/1000 strokes Tolerance	: -7.1	- Rated speed rpm : 2000 - Supply pomp
	1.2	
cm3/1000 strokes	: 1.0	+ pressure bar : 8.2
Shutoff solenoid		† Tolerance hPa : 0.3
Volt	: 12	+ Shutoff solenoid
		+ Volt : 12
PRESSURE DIFFEREN	ice	
THEODORE DETTEREN		Rated speed rpm : 750
	4250	
Rated speed rpm	: 1250	+ Supply pomp
Del. quantity		+ pressure bar : 4.7
cm3/1000 strokes	: -0.2	+ Tolerance hPa : 0.3
Tolerance		+ Shutoff solenoid
cm3/1000 strokes	: 0.1	+ Volt : 12
	. 0.1	7 1000
Shutoff solenoid	40	T AVEREI AV AVANTETAV
Volt	: 12	+ OVERFLOW QUANTITY
		+
TIMING-DEVICE TRA	VEL DIFFERENCE	+ Rated speed rpm : 2300 + Overflow quantity
Rated speed rpm Del. quantity	: 1250	ccm/10s : 97.2 Tolerance
cm3/1000 strokes Tolerance	: -0.8	ccm/10s : 41.6
cm3/1000 strokes	: 0.1	Check tolerance
Shutoff solenoid		+ ccm/10s : 41.6
Volt	: 12	+ Shutoff solenoid
VOCE	. 12	+ Volt : 12
		1
INJECTION-PUMP TE	ST SPECIFICATIONS	Rated speed rpm : 750 Overflow quantity
TIMING DEVICE CHAP	RACTERISTIC	ccm/10s : 63.8 Tolerance
Dated on and one	: 2000	- ccm/10s : 22.2
Rated speed rpm		
Tolerance mm	: 0.4	T Charle delegans
Check	2 (+ Check tolerance
tolerance mm	: 0.6	+ ccm/10s : 22.2
Shutoff solenoid		Shutoff solenoid
Volt	: 12	+ Volt : 12
	· -	1
Rated speed rpm	: 1000	DELIVERY AND BREAKAWAY CHARACTERISTIC
SV travel mm	: 1.0	Rated speed rpm : 2600

Del. quantity			→ Del. quantity
cm3/1000 strokes		23 N	cm3/1000 strokes : 36.5
Tolerance	•	23.0	Tolerance
cm3/1000 strokes	•	3.0	cm3/1000 strokes : 1.5
Check tolerance	•	3.0	Check tolerance
cm3/1000s.	•	4.0	- cm3/1000s. : 2.3
Shutoff solenoid	•	4.0	Shutoff solenoid
Volt		12	Volt : 12
VOLE	•	12	7 0000
Pated speed spe		2500	Rated speed rpm : 1250
Rated speed rpm	•	2300	Del. quantity
Del, quantity		75 5	cm3/1000 strokes : 37.4
cm3/1000 strokes	•	35.5	+ Tolerance
Tolerance		/ 0	cm3/1000 strokes : 0.5
cm3/1000 strokes	•	4.0	
Check tolerance		5.0	Check tolerance cm3/1000s. : 2.3
cm3/1000s.	:	5.0	+ cm3/1000S. : 2.3 + Shutoff solenoid
Shutoff solenoid		40	
Volt	:	12	+ Volt : 12
5 1 1 2 1 22		2000	†
Rated speed rpm	:	2800	†
Del. quantity		2.5	CLECTO CHUITOGE
cm3/1000 strokes	:	2.5	ELECTR. SHUTOFF
Tolerance		2 5	CONTROL LEVER, IDLE STOP
cm3/1000 strokes	:	2.5	705
Check tolerance			Rated speed rpm : 385
cm3/1000s.	:	2.5	Del. quantity
Shutoff solenoid		• •	+ cm3/1000 strokes : 1.5
Volt	:	12	+ Tolerance
			- cm3/1000 strokes : 1.5
Rated speed rpm	:	2300	- Check tolerance
Del. quantity			+ cm3/1000s. : 1.5
cm3/1000 strokes	:	41.0	+ Spread
Tolerance			+ cm3/1000 strokes : 5.0
cm3/1000 strokes	:	1.0	+
Check tolerance			FULL-LOAD STOP CONTROL LEVER
cm3/1000s.	:	2.3	+
Shutoff solenoid			+ Rated speed rpm : 385
Volt	:	12	+ Del. quantity
			+ cm3/1000 strokes : 1.5
Rated speed rpm	:	1000	+ Tolerance
Del. quantity			+ cm3/1000 strokes : 1.5
cm3/1000 strokes	:	37.7	+ Spread
Tolerance			- cm3/1000 strokes : 5.0
cm3/1000 strokes	:	1.5	the k tolerance
Check tolerance			+ cm3/1000s. : 1.5
cm3/1000s.	:	2.3	+ Spread
Shutoff solenoid			- cm3/1000 strokes : 5.0
Volt	:	12	+
			†
Rated speed rpm	:	2000	†
Del. quantity			†
cm3/1000 strokes	:	40.3	†
Tolerance		4 5	AUCCUTAIG A DAD DEDCAIDEAIT
cm3/1000 strokes	:	1.0	+ CHECKING LOAD-DEPENDENT
Check tolerance			+ START OF DELIVERY
cm3/1000S.	:	2.3	†
Shutoff solenoid		4-	+ DELIVERY DIFFERENCE
Volt	:	12	+
	•		1 6.4.4.4
Rated speed rpm	:	750	Rated speed rpm : 1250

Nal minadai.			
Del. quantity cm3/1000 strokes	•	-9.4	
Tolerance	•	7.4	
cm3/1000 strokes	:	2.0	
Check tolerance			
cm3/1000s.	:	2.0	
Shutoff solenoid Volt		12	
VOCC	•	7 -	
TIMING-DEVICE TRA	AVEL	DIFFERENCE	
Datad asaad ass		1250	
Rated speed rpm Del. quantity	:	1250	
cm3/1000 strokes	:	-0.8	
Tolerance			
cm3/1000 strokes	:	0.1	
Check tolerance cm3/1000s.	:	0.1	
Shutoff solenoid	•	. .	
Volt	:	12	
DELIVERY DIFFEREN	ICE		
DELIVERY DIFFEREN	·CL		
Rated speed rpm	:	1250	
Del. quantity		5.0	
cm3/1000 strokes Tolerance	:	5.0	
cm3/1000 strokes	:	3.0	
Check tolerance			
cm3/1000s.	:	3.0	
Shutoff solenoid Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	1250	
Tolerance mm	:	0.2	
Check		0.7	
tolerance mm Shutoff solenoid	:	0.3	
Volt	:	12	
EXHAUST-GAS RECIR	CUL A	ATION	
Rated speed rpm	:	1250	
Del. quantity cm3/1000 strokes	:	23.0	
Tolerance	•	23.0	
cm3/1000 strokes	:	0.5	
Check tolerance		2.5	
cm3/1000S. Shutoff solenoid	:	2.5	
Volt	:	12	
07407 TC4107TT41			
START TRANSITION			
Rated speed rpm	:	350	
Del. quantity		70.0	
cm3/1000 strokes	:	30.0	

Tolerance cm3/1000 strokes : 15.0 Shutoff solenoid Volt 12 Rated speed rpm : 200 Del. quantity 70.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : 25.0 Shutoff solenoid Volt 12 ASSEMBLY AND ADJUSTMENT DIMENSIONS Dimension K mm : 3,7 Tolerance mm : +-0,1 Dimension KF mm : 6,0 : +-0,2 Tolerance mm Dimension MS mm : 0,9 : +-0,2 Tolerance mm MICROSWITCH SET : 0,8...3,0 mm

End of test-specification sheet

: ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.03.95 Test oil : ISO 4113

Part no. : 0 460 494 405 Pump designation: VE4/9F2400R486-2

Customer-spec. information Customer : RENAULT : G8T - 790 Motor 60.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C Tolerance °C

Overflow

0.55 restriction mm

0.35 Inlet press. bar : 0.05 Tolerance bar

Test nozzle holde

: 1 688 901 022 assembly

Opening pressure

130 bar Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

2.00 x inside diameter: x length mm . 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

2.5 Setting mm 0.2 Tolerance mm Shutoff solenoid Volt 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa 6.2 Tolerance hPa 0.3 Shutoff solenoid 12 Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 37.4

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5 Shutoff solenoid 12

Volt

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm 450 Del. quantity

cm3/1000 strokes : 8.0

Tolerance

cm3/1000 strokes : 2.0 Shutoff solenoid

Volt 12

FULL-LOAD SPEED REGULATION

Rated speed rpm 2600

Del. quantity

cm3/1000 strokes : 23.0

Tolerance

cm3/1000 strokes : 3.0

12

Shutoff solenoid Volt

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 15.0

Shutoff solenoid			+				
Volt	:	12	+	SV travel mm	:	1.0	
			+	Tolerance mm	:	1.2	
			+	Check		4 4	
			†	tolerance mm	:	1.2	
LOAD-DEPENDENT ST	ARI	OF DELIVERY	†	Shutoff solenoid		40	
SETTING			†	Volt	:	12	
DELIVERY DIFFEREN	ICE		†	KSB/AFB Volt	:	12	
DELIVER! DIFFEREN	ICE		I	KSB/AFB VOCE	•	12	
Rated speed rpm	:	1250	I	SUPPLY PUMP PRESS	HDE	CHADACTEDT	STTC
Del. quantity	•	1650		001121 10111 11200	OIL	CHARACTER	0:10
cm3/1000 strokes	:	-7.1	1	Rated speed rpm	:	2000	
Tolerance	•		1	Supply pomp	·		
cm3/1000 strokes	:	1.0	1	pressure bar	:	8.2	
Shutoff solenoid			+	Tolerance hPa	:	0.3	
Volt	:	12	+	Shutoff solenoid			
			+	Volt	:	12	
PRESSURE DIFFEREN	CE		+				
0-4 1		4250	+	Rated speed rpm	:	750	
Rated speed rpm	:	1250	†	Subbia bowb		/ =	
Del. quantity cm3/1000 strokes		-0.2	†	pressure bar Tolerance hPa	:	4.7 0.3	
Tolerance	:	-0.2	Ţ	Shutoff solenoid	•	0.5	
cm3/1000 strokes	:	0.1	I	Volt	•	12	
Shutoff solenoid	•	0.,	I	VOCE	•	12	
Volt	:	12	1	OVERFLOW QUANTITY			
	•		1				
TIMING-DEVICE TRA	VEL	DIFFERENCE	-	Rated speed rpm	:	2300	
			+	Overflow quantity			
Rated speed rpm	:	1250	+	ccm/10s	:	97.2	
Del. quantity			+	Tolerance			
cm3/1000 strokes	:	-0.8	†	ccm/10s	:	41.6	
Tolerance		0.4	†	Charle talanana			
cm3/1000 strokes Shutoff solenoid	•	0.1	Ī	Check tolerance ccm/10s		41.6	
Volt		12	I	Shutoff solenoid	•	41.0	
VOCC	•	12	I	Volt	•	12	
			4	1011	•	, ,	
INJECTION-PUMP TE	ST	SPECIFICATIONS	1	Rated speed rpm	:	750	
			+	Overflow quantity			
TIMING DEVICE CHA	RAC	TERISTIC	+	ccm/10s	:	63.8	
			+	Tolerance			
Rated speed rpm	:	2000	†	ccm/10s	:	22.2	
Tolerance mm	•	0.4	†	Charle Aslanana			
Check		0.4	†	Check tolerance		22.2	
tolerance mm Shutoff solenoid	:	0.6	1	ccm/10s Shutoff solenoid	•	22.2	
Volt		12	I	Volt	•	12	
VOLL	•	12	I	10(1	•	16	
Rated speed rpm	:	1000	1	DELIVERY AND BREA	KAWA	Y CHARACTER	RISTIC
The second secon	•		+				
SV travel mm	:	1.0	+	Rated speed rpm	:	2600	
Tolerance mm	:	0.4	+	Del. quantity			
Check		_	+	cm3/1000 strokes	:	23.0	
tolerance mm	:	0.6	t	Tolerance		7.6	
Shutoff solenoid		40	†	cm3/1000 strokes	:	3.0	
Volt	:	12	†	Check tolerance cm3/1000s.		4.0	
Rated speed rpm	:	750	I	CIID/ (UUUS.	:	4.0	
nateu specu rpiii	•	1 50	Т				

M19

Shutoff solenoid Volt	:	12	+ Shutoff solenoid + Volt : 12
Rated speed rpm	:	2500	Rated speed rpm : 1250
Del. quantity cm3/1000 strokes Tolerance	:	35.5	Del. quantity cm3/1000 strokes : 37.4 Tolerance
cm3/1000 strokes Check tolerance	:	4.0	cm3/1000 strokes : 0.5 Check tolerance
cm3/1000s. Shutoff solenoid	:	5.0	cm3/1000s. : 2.3 Shutoff solenoid
Volt	:	12	Volt : 12
Rated speed rpm Del. quantity	:	2800	
cm3/1000 strokes Tolerance	:	2.5	ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP
cm3/1000 strokes Check tolerance	:	2.5	Rated speed rpm : 385
cm3/1000s. Shutoff solenoid	:	2.5	Del. quantity cm3/1000 strokes : 1.5
Volt	:	12	Tolerance cm3/1000 strokes : 1.5
Rated speed rpm Del. quantity	:	2300	+ Check tolerance + cm3/1000s. : 1.5
cm3/1000 strokes Tolerance		41.0	FULL-LOAD STOP CONTROL LEVER
Check tolerance	:	1.0	Rated speed rpm : 385
cm3/1000s. Shutoff solenoid	•	2.3	Del. quantity cm3/1000 strokes : 1.5
Volt	:	12 1000	Tolerance cm3/1000 strokes : 1.5 Check tolerance
Rated speed rpm Del. quantity cm3/1000 strokes	:	37.7	cm3/1000s. : 1.5
Tolerance cm3/1000 strokes	:	1.5	$\frac{1}{1}$
Check tolerance cm3/1000s.	•	2.3	<u> </u>
Shutoff solenoid	:	12	CHECKING LOAD-DEPENDENT
Rated speed rpm	:		START OF DELIVERY
Del. quantity cm3/1000 strokes			DELIVERY DIFFERENCE
Tolerance cm3/1000 strokes		1.0	Rated speed rpm : 1250 Del. quantity
Check tolerance cm3/1000s.	:	2.3	+ cm3/1000 strokes : -9.4 + Tolerance
Shutoff solenoid Volt	:	12	- cm3/1000 strokes : 2.0 - Check tolerance
Rated speed rpm	:	750	cm3/1000s. : 2.0 Shutoff solenoid
Del. quantity cm3/1000 strokes	:	36.5	+ Volt : 12
Tolerance cm3/1000 strokes	:	1.5	TIMING-DEVICE TRAVEL DIFFERENCE
Check tolerance cm3/1000S.	:	2.3	+ Rated speed rpm : 1250

Del. quantity cm3/1000 strokes	:	-0.8	
Tolerance cm3/1000 strokes Check tolerance	:	0.1	
cm3/1000s. Shutoff solenoid	:	0.1	
Volt	:	12	
DELIVERY DIFFEREN	ICE		
Rated speed rpm Del. quantity	* #:	1250	
cm3/1000 strokes Tolerance	:	5.0	
cm3/1000 strokes Check tolerance	:	3.0	
cm3/1000s. Shutoff solenoid	:	3.0	
Volt	:	12	
TIMING-DEVICE TRA	VEL	DIFFERENCE	
Rated speed rpm	:	1250	
Tolerance mm	:	0.2	
Check tolerance mm	:	0.3	
Shutoff solenoid	•	0.5	
Volt	:	12	
1011	•		
EXHAUST-GAS RECIR			
EXHAUST-GAS RECIR	CUL		
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes	CUL/	ATION	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	CUL/	ATION 1250	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	CUL/	ATION 1250 23.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	CUL/	ATION 1250 23.0 0.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: :	ATION 1250 23.0 0.5 2.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm	: :	ATION 1250 23.0 0.5 2.5	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes	CUL)	ATION 1250 23.0 0.5 2.5 12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity	: :	ATION 1250 23.0 0.5 2.5 12	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: : : : : : : : : : : : : : : : : : :	ATION 1250 23.0 0.5 2.5 12 350 30.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt Rated speed rpm	: : : : : : : : : : : : : : : : : : :	ATION 1250 23.0 0.5 2.5 12 350 30.0 15.0	
EXHAUST-GAS RECIR Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt START TRANSITION Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	: : : : : : : : : : : : : : : : : : :	350 30.0 15.0 15.0	

Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +-0,1
Dimension KF mm : KOT
Dimension MS mm : 0,9
Tolerance mm : +-0,2

MICROSWITCH

SET

mm : 0,8...3,0 : ARF 12,0

End of test-specification sheet

cm3/1000 strokes : 25.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.03.95 Test oil : ISO 4113

Part no. : 0 460 494 406 Pump designation : VE4/9F2400R486-3

Customer-spec. information
Customer : RENAULT
Motor : G8T-790 CA
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 022

Opening pressure

bar : 130 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.2 Tolerance hPa : 0.3 Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 37.4
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1090 strokes : 2.5
Shutcff solenoid

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Volt

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0
Tolerance

cm3/1000 strokes : 15.0

Shutoff solenoid		40	+	0		4.0
Volt	:	12	†	SV travel mm Tolerance mm	:	1.0 1.2
			I	Check	•	1.2
			1	tolerance mm	:	1.2
LOAD-DEPENDENT ST	ART	OF DELIVERY	1	Shutoff solenoid	•	
SETTING			+	Volt	:	12
			+			4.0
DELIVERY DIFFEREN	ICE		†	KSB/AFB Volt	:	12
Rated speed rpm	:	1250	I	SUPPLY PUMP PRESS	HE	CHADACTEDISTIC
Del. quantity	•	1000	1	001121101111111200	ONE	CIMARCIENTOTIC
cm3/1000 strokes	:	-7.1	+	Rated speed rpm	:	2000
Tolerance			+	Supply pomp		
cm3/1000 strokes	:	1.0	†	pressure bar	:	8.2
Shutoff solenoid Volt		12	†	Tolerance hPa Shutoff solenoid	:	0.3
VOCE	•	14	I	Volt		12
PRESSURE DIFFEREN	ICE		1	1000	•	12
			+	Rated speed rpm	:	750
Rated speed rpm	:	1250	+	Supply pomp		
Del. quantity		0.0	+	pressure bar	•	4.7
cm3/1000 strokes Tolerance	:	-0.2	1	Tolerance hPa Shutoff solenoid	:	0.3
cm3/1000 strokes	:	0.1	I	Volt	:	12
Shutoff solenoid	•	3. /	1	1000	•	10
Volt	:	12	+	OVERFLOW QUANTITY	•	
TTMTNO -FUTOF TO		0.7.EEEDENIGE	†	Date d amount amount		2700
TIMING-DEVICE TRA	VEL	DIFFERENCE	Ť	Rated speed rpm Overflow quantity		2300
Rated speed rpm	:	1250	I	ccm/10s	•	97.2
Del. quantity	•	1230	1	Tolerance	•	71.00
cm3/1000 strokes	:	-0.8	+	ccm/10s	:	41.6
Tolerance		0.4	†			
cm3/1000 strokes Shutoff solenoid	:	0.1	†	Check tolerance ccm/10s		41.6
Volt	:	12	I	Shutoff solenoid	•	41.0
VOCC	•	, ,	Ţ	Volt	:	12
INJECTION-PUMP TE	ST	SPECIFICATIONS	+	Rated speed rpm	:	750
TIMING SELECT OUR	D 4 0	TERICTIC	†	Overflow quantity		47.0
TIMING DEVICE CHA	KAU	1EKT211C	Ī	ccm/10s Tolerance	:	63.8
Rated speed rpm	:	2000	Ţ	ccm/10s	:	22.2
Tolerance mm	:	0.4	+			
Check		- .	+	Check tolerance		
tolerance mm	:	0.6	†	ccm/10s	:	22.2
Shutoff solenoid Volt		12	1	Shutoff solenoid Volt	•	12
VOC C	٠	12	1	VOCE	•	
Rated speed rpm	:	1000	+	DELIVERY AND BREA	KAWA	AY CHARACTERISTIC
		4 -	+			0.400
SV travel mm	:	1.0	†	Rated speed rpm	:	2600
Tolerance mm Check	:	0.4	Ī	Del. quantity cm3/1000 strokes		23.0
tolerance mm	:	0.6	Ţ	Tolerance	•	23.0
Shutoff solenoid	•		+	cm3/1000 strokes	:	3.0
Volt	:	12	†	Check tolerance		
0-4-4		750	†	cm3/1000s.	:	4.0
Rated speed rpm	:	750	+			

Shutoff solenoid Volt	:	12	+ Shutoff solenoid + Volt	:	12
Rated speed rpm Del. quantity	:	2500	Rated speed rpm Del. quantity	: 125	50
cm3/1000 strokes Tolerance	:	35.5	cm3/1000 strokes Tolerance	: 3	37.4
cm3/1000 strokes Check tolerance	:	4.0	cm3/1000 strokes Check tolerance	:	0.5
cm3/1000s. Shutoff solenoid		5.0	cm3/1000s. Shutoff solenoid	:	2.3
Volt	:	12	Volt	:	12
Rated speed rpm Del. quantity	:		 		
cm3/1000 strokes Tolerance	:	2.5	+ ELECTR. SHUTOFF + CONTROL LEVER, IDL	_E STOP	
cm3/1000 strokes Check tolerance		2.5	+ Rated speed rpm	: 38	35
cm3/1000S. Shutoff solenoid	:	2.5	+ Del. quantity + cm3/1000 strokes	:	1.5
Volt	:	12	+ Tolerance + cm3/1000 strokes	:	1.5
Rated speed rpm Del. quantity			+ Check tolerance + cm3/1090s.	:	1.5
cm3/1000 strokes Tolerance			+ Spread + cm3/1000 strokes	:	5.0
cm3/1000 strokes Check tolerance cm3/1000s.		1.0 2.3	FULL-LOAD STOP CON	TROL LE	EVER
Shutoff solenoid Volt	•	12	Rated speed rpm Del. quantity	: 38	35
Rated speed rpm	:		cm3/1000 strokes	:	1.5
Del. quantity cm3/1000 strokes			cm3/1000 strokes Spread	:	1.5
Tolerance cm3/1000 strokes		1.5	cm3/1000 strokes Check tolerance	:	5.0
Check tolerance cm3/1000s.	:	2.3	cm3/1000s. + Spread	:	1.5
Shutoff solenoid Volt	:	12	cm3/1000 strokes	:	5.0
Rated speed rpm	:	2000	‡		
Del. quantity cm3/1000 strokes	:	40.3	†		
Tolerance cm3/1000 strokes Check tolerance	:	1.0	CHECKING LOAD-DEPE START OF DELIVERY	NDENT	
cm3/1000s. Shutoff solenoid	:	2.3	DELIVERY DIFFERENCE	·F	
Volt	:	12	Rated speed rpm	: 125	0
Rated speed rpm Del. quantity	:	750	Del. quantity cm3/1000 strokes		9.4
cm3/1000 strokes Tolerance	:	36.5	Tolerance cm3/1000 strokes		2.0
cm3/1000 strokes Check tolerance	:	1.5	Check tolerance cm3/1000s.	:	2.0
cm3/1000S.	:	2.3	+		

Shutoff solenoid Volt	: 12	
TIMING-DEVICE TRA	VEL DIFFERENCE	
Rated speed rpm Del. quantity	: 1250	
cm3/1000 strokes	: -0.8	
cm3/1000 strokes Check tolerance	: 0.1	
cm3/1000S. Shutoff solenoid	: 0.1	
Volt	: 12	
DELIVERY DIFFEREN	CE	
Rated speed rpm Del. quantity	: 1250	
cm3/1000 strokes Tolerance	: 5.0	
cm3/1000 strokes Check tolerance	: 3.0	
cm3/1000s. Shutoff solenoid	: 3.0	
Volt	: 12	
TIMING-DEVICE TRA	VEL DIFFERENCE	
Rated speed rpm Tolerance mm Check	: 1250 : 0.2	
tolerance mm Shutoff solenoid	: 0.3	
Volt	: 12	
EXHAUST-GAS RECIR	CULATION	
Rated speed rpm Del. quantity	: 1250	
cm3/1000 strokes Tolerance	: 23.0	
cm3/1000 strokes Check tolerance	: 0.5	
cm3/1000s. Shutoff solenoid	: 2.5	
Volt	: 12	
START TRANSITION		
Rated speed rpm Del. quantity	: 350	
cm3/1000 strokes Tolerance	: 30.0	
cm3/1000 strokes Shutoff solenoid	: 15.0	
Volt	: 12	

Rated speed rpm : 200
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 25.0

Shutoff solenoid Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +-0,1
Dimension KF mm : KOT
Dimension MS mm : 0,9
Tolerance mm : +-0,2

MICROSWITCH SET

mm : 0,8...3,0 : ARF 12,0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.01.96 Edition : ISO 4113 Test oil

: 0 460 414 096 Part no. Pump designation : VE4/11F2100R493

Customer-spec. information Customer : FIAT-AUTO : M711 KT 19.D Motor 72.0 Power KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance °C

Overflow

0.75 restriction mm

Inlet press. bar : 0.35 Tolerance bar 0.05

Test nozzle holde

: 1 688 901 116 assembly

Opening pressure

207 Tolerance bar

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm 450 :

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

1500 Rated speed rpm Aneroid pressure

1000 hPa

6.2 Settina mm Tolerance mm 0.2 Shutoff solenoid

12 Volt

12 KSB/AFB Volt

SUPPLY PUMP PRESSURE

Rated speed rpm 1500

Aneroid pressure

hPa 1000

Setting hPa 7.3 Tolerance hPa 0.2 Shutoff solenoid

Volt 12

12 KSB/AFB Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1750

Aneroid pressure

1000

Del. quantity

cm3/1000 strokes : 63.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : Check tolerance

cm3/1000s.

Shutoff solenoid

Volt

12 KSB/AFB Volt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

4.0

4.5

12

Rated speed rpm 750

Del. quantity

cm3/1000 strokes : 44.5

Tolerance

cm3/1000 strokes

Shutoff solenoid

Volt 12

Check tolerance

cm3/1000s.4.5

KSB/AFB Volt 12

IDLE SETTING

Rated speed rpm	:	450	+ Del. quantity
Del. quantity			+ cm3/1000 strokes : −9.0
cm3/1000 strokes	:	8.0	† Tolerance
Tolerance			+ cm3/1000 strokes : 1.0
cm3/1000 strokes	:	2.0	→ Shutoff solenoid
Shutoff solenoid			+ Volt : 12
Volt	:	12	1
Spread	•		
cm3/1000 strokes	•	6.0	
Check tolerance	•	• • • • • • • • • • • • • • • • • • • •	+ PRESSURE DIFFERENCE
cm3/1000s.	•	6.5	- Meddone der Enemal
(113) (0000)	•	3.3	Rated speed rpm : 1500
KSB/AFB Volt	:	12	Del. quantity
KODY AID TOTE	•	, 4	- cm3/1000 strokes : -0.2
			Tolerance
FULL-LOAD SPEED R	ECHI	ATTON	cm3/1000 strokes : 0.1
TOLL-LOAD SPEED R	COOL	WITOM.	Shutoff solenoid
Dated speed nom		2400	+ Volt : 12
Rated speed rpm	•	1000	7 0011 : 12
Pressure hPa	:	1000	# KOD (45D - V-1+
Del. quantity		72.0	+ KSB/AFB Volt : 12
cm3/1000 strokes	:	32.0	TIMING DEUTOF TOAUGU DIFFERMUSE
Tolerance		2.2	+ TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes	:	2.0	†
Shutoff solenoid		• •	+ Rated speed rpm : 1500
Volt	:	12	+ Del. quantity
			+ cm3/1000 strokes : −0.6
KSB/AFB Volt	:	12	† Tolerance
			+ cm3/1000 strokes : 0.1
STARTING FUEL DEL	IVER	Υ	+ Shutoff solenoid
			+ Volt : 12
Rated speed rpm	:	100	+
Del. quantity			→ KSB/AFB Volt : 12
cm3/1000 strokes	:	70.0	+
Tolerance			
cm3/1000 strokes	:	15.0	INJECTION-PUMP TEST SPECIFICATIONS
Shutoff solenoid			+
Volt	:	12	→ TIMING DEVICE CHARACTERISTIC
			+
KSB/AFB Volt	:	12	+ Rated speed rpm : 2000
			+ Aneroid pressure
SET GRADUATED STA	RTIN	G DELIVERY	+ hPa : 1000
CONTROL LEVER, ID			4
		•	SV travel mm : 8.1
Rated speed rpm	:	100	Tolerance mm : 0.4
Del. quantity	•		+ Check
cm3/1000 strokes	:	32.0	tolerance mm : 0.9
	•		+ Shutoff solenoid
JOLEFANCE			
Tolerance		1.0	+ Volt : 12
cm3/1000 strokes	:	1.0	† Volt : 12
cm3/1000 strokes Shutoff solenoid	:		+
cm3/1000 strokes	:	1.0 12	Volt : 12 KSB/AFB Volt : 12
cm3/1000 strokes Shutoff solenoid Volt	:	12	KSB/AFB Volt : 12
cm3/1000 strokes Shutoff solenoid	:		KSB/AFB Volt : 12 Rated speed rpm : 750
cm3/1000 strokes Shutoff solenoid Volt	:	12	KSB/AFB Volt : 12 Rated speed rpm : 750 Aneroid pressure
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt	:	12 12	KSB/AFB Volt : 12 Rated speed rpm : 750
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST	:	12 12	KSB/AFB Volt : 12 Rated speed rpm : 750 Aneroid pressure hPa : 1000
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt	:	12 12	KSB/AFB Volt : 12 Rated speed rpm : 750 Aneroid pressure hPa : 1000 SV travel mm : 2.3
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST. SETTING	: : ART (12 12	KSB/AFB Volt : 12 Rated speed rpm : 750 Aneroid pressure hPa : 1000 SV travel mm : 2.3 Tolerance mm : 0.4
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST	: : ART (12 12	Rated speed rpm : 750 Aneroid pressure hPa : 1000 SV travel mm : 2.3 Tolerance mm : 0.4 Check
cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt LOAD-DEPENDENT ST. SETTING	: : ART (12 12	KSB/AFB Volt : 12 Rated speed rpm : 750 Aneroid pressure hPa : 1000 SV travel mm : 2.3 Tolerance mm : 0.4

Shutoff solenoid Volt	: 12	‡	Check tolerance	,	•
KSB/AFB Volt	: 12	‡	ccm/10s Shutoff solenoid	: 4	1.6
Rated speed rpm	: 450	‡	Volt	•	12
Aneroid pressure	: 1000	1	KSB/AFB Volt	:	12
SV travel mm	: 3.0	1	Rated speed rpm Aneroid pressure	: 75	D
Tolerance mm Check	0.1	Ŧ	hPa Overflow quantity		000
tolerance mm Shutoff solenoid	: 1.0	Ŧ	ccm/10s Tolerance	: 11	1.1
Volt	: 12	Ŧ	ccm/10s	: 2	2.2
Rated speed rpm	: 1000	Ŧ	Check tolerance	. 3	2.2
Aneroid pressure hPa	: 1000	‡	ccm/10s Shutoff solenoid		2.2
SV travel mm	: 4.6	Ī	Volt	•	12
Tolerance mm Check	1.0	<u> </u>	KSB/AFB Volt	•	12
tolerance mm Shutoff solenoid	: 1.2	<u> </u>	DELIVERY AND BREA	KAWAY CH	ARACTERISTIC
Volt	: 12	1	Rated speed rpm Aneroid pressure	: 2400)
SUPPLY PUMP PRESS	URE CHARACTER	ISTIC	hPa Del. quantity	: 10	000
Rated speed rpm Aneroid pressure	: 2100	1	cm3/1000 strokes Tolerance	: 32	2.0
hPa Supply pomp	: 1000		cm3/1000 strokes Check tolerance	: 6	2.0
pressure bar	: 8.5	Į	cm3/1000s.	: (5.0
Tolerance hPa Shutoff solenoid	: 0.3	‡	Shutoff solenoid Volt	:	12
Volt	: 12	1	KSB/AFB Volt	•	12
KSB/AFB Volt	: 12	İ	Rated speed rpm	: 2500	
Rated speed rpm	: 750	+	Aneroid pressure		
Aneroid pressure hPa	: 1000	‡	hPa Del. quantity		000
Supply pomp pressure bar	: 5.5	‡	cm3/1000 strokes Check tolerance	: 20	0.0
Tolerance hPa Shutoff solenoid	: 0.3	Ì	cm3/1000s. Shutoff solenoid	: 6	5.0
Volt	: 12	1	Volt	:	12
KSB/AFB Volt	: 12	1	KSB/AFB Volt	:	12
OVERFLOW QUANTITY		1	Rated speed rpm Aneroid pressure	: 2300)
Rated speed rpm Aneroid pressure	: 2100	1	hPa Del. quantity	: 10	100
hPa Overflow quantity	: 1000	1	cm3/1000 strokes Tolerance	: 44	.0
cm/10s Tolerance	: 138.8	$\frac{1}{2}$	cm3/1000 strokes Shutoff solenoid	: 4	.0
ccm/10s	: 41.6	1	Volt	:	12

			+ Tolerance
KSB/AFB Volt	:	12	cm3/1000 strokes : 2.5
	•		Check tolerance
Rated speed rpm	:	2650	+ cm3/1000s. : 4.0
Aneroid pressure		46	+ Shutoff solenoid
hPa	:	1000	+ Volt : 12
Del. quantity		4 5	+ WOD (450 W) + 42
cm3/1000 strokes	:	1.5	+ KSB/AFB Volt : 12
Tolerance cm3/1000 strokes		1,5	Dated aread area a 750
Check tolerance	•	1,2	+ Rated speed rpm : 750 + Aneroid pressure
cm3/1000s.		1.5	+ hPa : 1000
Shutoff solenoid	•	1	Del. quantity
Volt	•	12	+ cm3/1000 strokes : 75.0
****	•		+ Tolerance
KSB/AFB Volt	:	12	+ cm3/1000 strokes : 4.5
	•		+ Shutoff solenoid
Rated speed rpm	:	750	+ Volt : 12
Aneroid pressure			+
hPa	:	400	+ KSB/AFB Volt : 12
Del. quantity			†
cm3/1000 strokes	:	64.0	Rated speed rpm : 1750
Tolerance		0.5	+ Aneroid pressure + hPa : 1000
cm3/1000 strokes Check tolerance	:	0.5	+ hPa : 1000 + Del. quantity
cm3/1000s.		4.0	cm3/1000 strokes : 63.0
Shutoff solenoid	•	4.0	Tolerance
Volt	:	12	+ cm3/1000 strokes : 0.5
1011	•		+ Check tolerance
KSB/AFB Volt	:	12	+ cm3/1000s. : 3.5
			+ Shutoff solenoid
Rated speed rpm	:	2100	+ Volt : 12
Aneroid pressure			+
hPa	:	1000	†
Del. quantity			+
cm3/1000 strokes	:	61.0	+ ELECTR. SHUTOFF
Tolerance		2.0	CONTROL LEVER, IDLE STOP
cm3/1000 strokes	:	2.0	Dated arred arr. 4 (50
Check tolerance		4.0	Rated speed rpm : 450
cm3/1000S. Shutoff solenoid	ī	4.0	+ Del. quantity + cm3/1000 strokes : 1.5
Volt	:	12	+ Tolerance
AOCE	•	12	cm3/1000 strokes : 1.5
KSB/AFB Volt	:	12	+ Check tolerance
	-	. •	+ cm3/1000s. : 1.5
Budged and all man		550	+
Rated speed rpm	:	5 50	
Del. quantity	:		+ FULL-LOAD STOP CONTROL LEVER
		47.5	+
Del. quantity cm3/1000 strokes Tolerance	:	47.5	Rated speed rpm : 450
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:		Rated speed rpm : 450
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	:	47.5 3.0	Rated speed rpm : 450 - Sal. quantity - cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:	47.5	Rated speed rpm : 450 - Fal. quantity - cm3/1000 strokes : 1.5 - Tolerance
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	:	47.5 3.0 12	Rated speed rpm : 450 Fal. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	:	47.5 3.0	Rated speed rpm : 450 Fal. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt	:	47.5 3.0 12 12	Rated speed rpm : 450 Fal. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm	:	47.5 3.0 12	Rated speed rpm : 450 Fel. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm Aneroid pressure	:	47.5 3.0 12 12 1500	Rated speed rpm : 450 Fal. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm Aneroid pressure hPa	:	47.5 3.0 12 12	Rated speed rpm : 450 Fel. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5 IDLE DELIVERY
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm Aneroid pressure		47.5 3.0 12 12 1500	Rated speed rpm : 450 Fel. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5

Del. quantity		+ Rated speed rpm	: 1500
cm3/1000 strokes Tolerance	: 1.5	+ Del. quantity + cm3/1000 strokes	: 5.0
cm3/1000 strokes	: 1.5	+ Tolerance	
Check tolerance cm3/1000s.	: 1.5	+ cm3/1000 strokes + Check tolerance	: 1.0
Shutoff solenoid Volt	: 12	cm3/1000s. + Shutoff solenoid	: 1.0
VOCE		+ Volt	: 12
KSB/AFB Volt	: 12	+ + KSB/AFB Volt	: 12
Rated speed rpm	: 470	+	
Del. quantity cm3/1000 strokes	: 3.0	† TIMING-DEVICE TRA	VEL DIFFERENCE
Tolerance	. 3.3	Rated speed rpm	: 1500
cm3/1000 strokes	: 3.0	Tolerance mm	: 0.4
Check tolerance	. 5.0	Check	. 0.4
cm3/1000s.	: 4.0	tolerance mm	: 0.4
Shutoff solenoid	· · · · · · · · · · · · · · · · · · ·	Shutoff solenoid	
Volt	: 12	Volt	: 12
		1	. ,,
KSB/AFB Volt	: 12	+ KSB/AFB Volt	: 12
	_	+	_
		EXHAUST-GAS RECIR	TH ATTON
		T EXTINUST TOAS RECTRE	COUNTION
		Rated speed rpm	: 1000
CHECKING LOAD-DEF	PENDENT	+ Del. quantity	
START OF DELIVERY		+ cm3/1000 strokes	: 17.9
		Tolerance	
DELIVERY DIFFEREN	ICE		: 1.0
		+ Check tolerance	
Rated speed rpm	: 1500	+ cm3/1000s.	: 2.5
Del. quantity	- - -	+ Shutoff solenoid	
cm3/1000 strokes	: -9.0	+ Volt	: 12
Tolerance	• • • • •	+	• •
cm3/1000 strokes	: 3.0	+ KSB/AFB Volt	: 12
Check tolerance	· •••	+	· • • • • • • • • • • • • • • • • • • •
cm3/1000s.	: 4.0	+ START TRANSITION	
Shutoff solenoid		+	
Volt	: 12	+ Rated speed rpm	: 450
		+ Del. quantity	·- -
KSB/AFB Volt	: 12	cm3/1000 strokes	: 60.0
=		+ Tolerance	-
TIMING-DEVICE TRA	VEL DIFFERENCE	cm3/1000 strokes	: 15.0
		+ Shutoff solenoid	
		+ Volt	: 12
Rated speed rpm	: 1500		• 12
	: 1500	+	
Del. quantity	: 1500 : -0.6	KSB/AFB Volt	: 12
Del. quantity cm3/1000 strokes		}	
Del. quantity cm3/1000 strokes Tolerance		}	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: -0.6 : 0.1	}	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: -0.6	KSB/AFB Volt	: 12
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: -0.6 : 0.1	KSB/AFB Volt Rated speed rpm	: 12
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: -0.6 : 0.1	KSB/AFB Volt Rated speed rpm Del. quantity	: 12 : 250
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid Volt	: -0.6 : 0.1 : 0.1	KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes	: 12 : 250
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: -0.6 : 0.1 : 0.1	KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 12 : 250 : 85.0
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Shutoff solenoid	: -0.6 : 0.1 : 0.1 : 12	KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 12 : 250 : 85.0
Del. quantity cm3/1000 strokes Folerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid /olt KSB/AFB Volt	: -0.6 : 0.1 : 0.1 : 12 : 12	KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: 12 : 250 : 85.0 : 15.0 : 12
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Shutoff solenoid	: -0.6 : 0.1 : 0.1 : 12 : 12	KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Shutoff solenoid	: 12 : 250 : 85.0 : 15.0

ASSEMBLY AND ADJUSTMENT DIMENSIONS

: K1 Dimension K mm Dimension KF mm : 5,4 Tolerance mm : +-0,2

POTENTIOMETER

SET

1. measurement

: 5,0 voltage Volt 1. measurement

: 2,0 voltage Volt

MICROSWITCH

SET

: GST 76,9 mm

: ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 43,0..45,0

Control lever

: 54,8..65,2 position YB mm

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 13.03.95 Edition : ISO 4113 Test oil

: 0 460 414 125 Part no. Pump designation: VE4/11F2100R493-1

Customer-spec. information : FIAT-AUTO Customer : M711 NT 19.L Motor Power KW 70.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C 55 Tolerance °C 1

Overflow

restriction mm 0.75

0.35 Inlet press. bar : Tolerance bar 0.05

Test nozzle holde

: 1 688 901 116 assembly

Opening pressure

207 bar 3 Tolerance bar

: 1 680 750 073 Test lines

Outside diameter : 6.00

2.00 x inside diameter : 450 x length mm

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm 1500

Aneroid pressure

1000

Setting mm 6.2 Tolerance mm 0.2 Shutoff solenoid

Volt

KSB/AFB Volt 12

12

SUPPLY PUMP PRESSURE

1500 Rated speed rpm

Aneroid pressure

hPa 1000

Setting hPa 7.3 Tolerance hPa 0.2

Shutoff solenoid

Volt 12

12 KSB/AFB Volt

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 1750 Aneroid pressure 1000 Del. quantity cm3/1000 strokes : 63.0 Tolerance

0.5 cm3/1000 strokes :

Spread

cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5

Shutoff solenoid Volt

KSB/AFB Volt 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm 750 Del. quantity cm3/1000 strokes : 44.5

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid Volt

Check tolerance cm3/1000s.

12

4.5

12

12 KSB/AFB Volt :

IDLE SETTING

Rated speed rpm	: 450	+ Del. quantity
Del. quantity cm3/1000 strokes	: 8.0	+ cm3/1000 strokes : -9.0 + Tolerance
Tolerance	. 0.0	- cm3/1000 strokes : 1.0
cm3/1000 strokes	: 2.0	+ Shutoff solenoid
Shutoff solenoid	40	† Volt : 12
Volt	: 12	KSB/AFB Volt : 12
Spread cm3/1000 strokes	: 6.0	T KOD/AFB VOLU : 12
Check tolerance		PRESSURE DIFFERENCE
cm3/1000s.	: 6.5	+
POD /AFD Walt	. 12	+ Rated speed rpm : 1500
KSB/AFB Volt	: 12	+ Del. quantity + cm3/1000 strokes : -0.2
		Tolerance
FULL-LOAD SPEED F	REGULATION	+ cm3/1000 strokes : 0.1
	2/22	+ Shutoff solenoid
Rated speed rpm Pressure hPa	: 2400 : 1000	† Volt : 12
Del. quantity	. 1000	KSB/AFB Volt : 12
cm3/1000 strokes	: 32.0	+
Tolerance		+ TIMING-DEVICE TRAVEL DIFFERENCE
cm3/1000 strokes Shutoff sclenoid	: 2.0	+ Rated speed rpm : 1500
Volt	: 12	+ Rated speed rpm : 1500 + Del. quantity
1011		+ cm3/1000 strokes : -0.6
KSB/AFB Volt	: 12	Tolerance
STARTING FUEL NEL	TUEDY	+ cm3/1000 strokes : 0.1
STARTING FUEL DEL	IVERT	+ Shutoff solenoid + Volt : 12
Rated speed rpm	: 100	+
Del. quantity		+ KSB/AFB Volt : 12
cm3/1000 strokes	: 70.0	+
Tolerance cm3/1000 strokes	: 15.0	INJECTION—PUMP TEST SPECIFICATIONS
Shutoff solenoid	. 13.0	11000011014 70111 7251 372011 10411010
Volt	: 12	† TIMING DEVICE CHARACTERISTIC
140m / 140m - 14 14	40	2000
KSB/AFB Volt	: 12	+ Rated speed rpm : 2000 + Aneroid pressure
		hPa : 1000
SETTING GRAD. STA	RTING FUEL DELIVERY	† Tolerance mm : 0.4
FULL-LOAD STOP CO	NTROL LEVER	+ Check
Rated speed rpm	: 100	tolerance mm : 0.9 Shutoff solenoid
Del. quantity	. 100	Volt : 12
cm3/1000 strokes	: 32.0	+
Tolerance	4.0	+ KSB/AFB Volt : 12
cm3/1000 strokes Shutoff solenoid	: 1.0	Rated speed rpm : 750
Volt	: 12	Aneroid pressure
		hPa : 1000
KSB/AFB Volt	: 12	7
LOAD-DEPENDENT ST	ADT OF DELTHERY	+ SV travel mm : 2.3 + Tolerance mm : 0.4
SETTING	MUL DECIVER!	+ Check
		tolerance mm : 0.9
DELIVERY DIFFEREN	CE	+ Shutoff solenoid
Pated speed spe	: 1500	† Volt : 12
Rated speed rpm	. 1500	T

N05

KSB/AFB Volt	:	12	‡	- -	Shutoff solenoid Volt	:	12	
Setting point KSB Rated speed rpm		·5 0	1	- -	KSB/AFB Volt	:	12	
Aneroid pressure hPa	:	1000	+	-	Rated speed rpm	:	750	
SV travel mm	:	3.0	‡	-	Aneroid pressure hPa	:	1000	
Tolerance mm Check	•	0.1	†		Overflow quantity ccm/10s	:	111.1	
tolerance mm Shutoff solenoid Volt	:	1.0	1	•	Tolerance ccm/10s	:	22.2	
Rated speed rpm	: 10	12	I		Check tolerance ccm/10s	:	22.2	
Aneroid pressure		1000	+		Shutoff solenoid Volt	•	12	
SV travel mm	•	4.6	+		KSB/AFB Volt	:	12	
Tolerance mm Shutoff solenoid	•	1.0	‡		DELIVERY AND BREA	KAWA	Y CHARACT	TERISTIC
Volt	:	12	+		Rated speed rpm	:	2400	
SUPPLY PUMP PRESSI			‡	•	Aneroid pressure hPa	:	1000	
Rated speed rpm Aneroid pressure hPa		00 1000	Ī	•	Del. quantity cm3/1000 strokes Tolerance	:	32.0	
Supply pomp pressure bar	•	8.5	Ī		cm3/1000 strokes Check tolerance	:	2.0	
Tolerance hPa Shutoff solenoid	•	0.3	+		cm3/1000s. Shutoff solenoid	:	5.0	
Volt	:	12	‡		Volt	:	12	
KSB/AFB Volt	:	12	+		KSB/AFB Volt	:	12	
Rated speed rpm Aneroid pressure		50	‡		Rated speed rpm Anercid pressure	:	2500	
hPa Supply pomp	•	1000	‡	•	hPa Del. quantity	•	1000	
pressure bar Tolerance hPa Shutoff solenoid	:	5.5 0.3	Ŧ		cm3/1000 strokes Check tolerance cm3/1000s.		20.0	
Volt	:	12	Ī		Shutoff solenoid Volt	:	12	
KSB/AFB Volt	:	12	+		KSB/AFB Volt	:	12	
OVERFLOW QUANTITY			+		Rated speed rpm	:	2300	
Rated speed rpm Aneroid pressure			‡		Aneroid pressure hPa	:	1000	
hPa Overflow quantity		1000	‡		Del. quantity cm3/1000 strokes	:	44.0	
ccm/10s Tolerance		38.8	‡		Tolerance cm3/1000 strokes Shutoff solenoid	:	4.0	
ccm/10s Check tolerance	•	41.6	Ī		Volt	:	12	
ccm/10s	:	41.6	Ŧ		KSB/AFB Volt	:	12	

Rated speed rpm		2620	† Tolerance
Aneroid pressure hPa	•	1000	+ cm3/1000 strokes : 2.5 + Check tolerance
Del. quantity	•		+ cm3/1000s. : 4.0
cm3/1000 strokes	:	1.5	+ Shutoff solenoid
Tolerance cm3/1000 strokes	:	1.5	+ Volt : 12
Check tolerance			+ KSB/AFB Volt : 12
cm3/1000S. Shutoff solenoid	;	1.5	+ Rated speed rpm : 750
Volt	:	12	Aneroid pressure
1400 / 1000		45	hPa : 1000
KSB/AFB Volt	:	12	+ Del. quantity + cm3/1000 strokes : 75.0
Rated speed rpm		750	† Tolerance
Aneroid pressure		400	+ cm3/1000 strokes : 4.5 + Shutoff solenoid
hPa	Ť	400	+ Volt : 12
LDA/		•••	+
HBA stroke mm Del. quantity	:	7.4	KSB/AFB Volt : 12
cm3/1000 strokes	:	64.0	Rated speed rpm : 1750
Tolerance		0.5	Aneroid pressure
cm3/1000 strokes Check tolerance	·	0.5	† hPa : 1000 † Del. quantity
cm3/1000s.	:	4.0	+ cm3/1000 strokes : 63.0
Shutoff solenoid Volt		12	+ Tolerance + cm3/1000 strokes : 0.5
VOCC	•	16	- Check tolerance
KSB/AFB Volt	:	12	+ cm3/1000s. : 3.5
Rated speed rpm	:	2100	+ Shutoff solenoid + Volt : 12
Aneroid pressure			+
hPa	:	1000	†
Del. quantity cm3/1000 strokes	:	61.0	ELECTR. SHUTOFF
Tolerance			CONTROL LEVER, IDLE STOP
		2.0	Total aread are (50
cm3/1000 strokes	:	2.0	- Pared cheed rom * //3//
Check tolerance	:	4.0	+ Rated speed rpm : 450 + Del. quantity
Check tolerance cm3/1000s. Shutoff solenoid	:	4.0	Del. quantity cm3/1000 strokes : 1.5
Check tolerance cm3/1000s.	:		Del. quantity cm3/1000 strokes : 1.5 Tolerance
Check tolerance cm3/1000s. Shutoff solenoid	:	4.0	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance
Check tolerance cm3/1000s. Shutoff solenoid Volt KSB/AFB Volt	•	4.0 12 12	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5
Check tolerance cm3/1000s. Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm	:	4.0 12	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance
Check tolerance cm3/1000s. Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes	:	4.0 12 12	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5 Spread cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	4.0 12 12 550 47.5	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5 Spread
Check tolerance cm3/1000s. Shutoff solenoid Volt KSB/AFB Volt Rated speed rpm Del. quantity cm3/1000 strokes	:	4.0 12 12 550	Del. quantity cm3/1000 strokes : 1.5 Tolerance cm3/1000 strokes : 1.5 Check tolerance cm3/1000s. : 1.5 Spread cm3/1000 strokes : 5.0
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Shutoff solenoid 12			
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Rated speed rpm : 1000			FXHAUST-GAS RECTROULATION
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KSB/AFB Volt : 12 + Shutoff solenoid + Volt : 12		: 12	
+ Volt : 12	KSB/AFB Volt	: 12	
DELIVERY DIFFERENCE +			
	DELIVERY DIFFEREN	CE	+

NO8

12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7.4

Dimension K mm : K1
Dimension KF mm : K0T
MS1 dimension mm : 1,2

Tolerance mm : +0,15/-0,1

MICROSWITCH

SET

mm : ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 43,0..45,0

Control lever

position YB mm : 54,8..65,2

BOSCH INJ. PUMP TEST SPECIFICATIONS
Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 21.06.95 Test oil : ISO 4113

Part no. : 0 460 414 121 Pump designation : VE4/11F1900R494-1

Customer—spec. information
Customer : IVECO-SOFIM

Motor : 8140.47.2585

TEST BENCH REQUIREMENTS

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 027

Opening pressure

bar : 250 Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Aneroid pressure

hPa : 1000

Setting mm : 1.8
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Setting hPa : 6.0

Tolerance hPa : 0.3
Shutoff solenoid

Volt :

FULL-LOAD DELIVERY WITH BOOST PRESSURE

12

1400 Rated speed rpm : Aneroid pressure 1000 hPa Del. quantity cm3/1000 strokes : 56.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 4.5 Shutoff solenoid 12 Valt

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550

Del. quantity
cm3/1000 strokes : 27.0

Tolerance
cm3/1000 strokes : 0.5

Shutoff solenoid

Volt : 12
Check tolerance
cm3/1000s. : 4.5

IDLE SETTING

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid

Volt : 12 Spread cm3/1000 strokes : 6.0

Check tolerance cm3/1000s. : 6.5

FULL-LOAD SPEED REGULATION	+
Rated speed rpm : 2100 Pressure hPa : 1000	INJECTION-PUMP TEST SPECIFICATIONS
Del. quantity cm3/1000 strokes : 37.0	TIMING DEVICE CHARACTERISTIC
Tolerance cm3/1000 strokes : 3.0	Rated speed rpm : 1600
Shutoff solenoid Volt : 12	+ hPa : 1000
STARTING FUEL DELIVERY	SV travel mm : 4.3 Tolerance mm : 0.4
Rated speed rpm : 100	+ Check + tolerance mm : 0.7
Del. quantity cm3/1000 strokes : 65.0	+ Shutoff solenoid + Volt : 12
Tolerance cm3/1000 strokes : 25.0	,
Shutoff solenoid Volt : 12	+ Aneroid pressure + hPa : 1000
	SV travel mm : 1.0 Tolerance mm : 0.4
LOAD-DEPENDENT START OF DELIVER SETTING	
DELIVERY DIFFERENCE	+ Shutoff solenoid + Volt : 12
Rated speed rpm : 1400	Rated speed rpm : 1900
Pressure hPa : 1000 Del. quantity	hPa : 1000
cm3/1000 strokes : -26.0 Tolerance	SV travel mm : 4.9
cm3/1000 strokes : 1.0 Shutoff solenoid	Check
Volt : 12	tolerance mm : 0.7 Shutoff solenoid
PRESSURE DIFFERENCE Rated speed rpm : 1400	+ Volt : 12 + SUPPLY PUMP PRESSURE CHARACTERISTI
Rated speed rpm : 1400 Aneroid pressure hPa : 1000	Rated speed rpm : 1900
Del. quantity cm3/1000 strokes : -0.2	Aneroid pressure hPa : 1000
Tolerance cm3/1000 strokes : 0.1	Supply pomp pressure bar : 8.5
Shutoff solenoid Volt : 12	Tolerance hPa : 0.3 Shutoff solenoid
TIMING-DEVICE TRAVEL DIFFEREN	Volt : 12
Rated speed rpm : 1400	Rated speed rpm : 700 Aneroid pressure
Aneroid pressure hPa : 1000	hPa : 1000 Supply pomp
Del. quantity cm3/1000 strokes : -0.8	pressure bar : 4.1 Tolerance hPa : 0.3
Tolerance cm3/1000 strokes : 0.1	Shutoff solenoid Volt : 12
Shutoff solenoid Volt : 12	OVERFLOW QUANTITY

OVERFLOW QUANTITY

Volt

12

				+	Shutoff solenoid		
Rated speed rpm	:	1900		+	Volt	:	12
Aneroid pressure hPa	:	1000		‡	Rated speed rpm	:	700
Overflow quantity	/	470.0		†	Aneroid pressure		/ 00
ccm/10s Tolerance	:	138.8		Ī	hPa Del. quantity	:	400
ccm/10s	:	41.6		1	cm3/1000 strokes	:	44.0
				+	Tolerance		
Check tolerance		11 /		†	cm3/1000 strokes	:	0.5
ccm/10s Shutoff solenoid	•	41.6		Ī	Check tolerance cm3/1000s.		4.0
Volt	:	12		1	Shutoff solenoid	•	,
				+	Volt	:	12
Rated speed rpm Aneroid pressure	;	700		†	Rated speed rpm	:	1900
hPa	:	1000		I	Aneroid pressure	•	1700
Overflow quantity	,			+	hPa	:	1000
ccm/10s	:	111.1		†	Del. quantity		50 F
Tolerance ccm/10s	:	22.2		İ	cm3/1000 strokes Tolerance	:	58.5
CCIII/ 103	•	22.2		Ţ	cm3/1000 strokes	:	2.5
Check tolerance				+	Check tolerance		
ccm/10s	:	22.2		†	cm3/1000s.	:	3.5
Shutoff solenoid Volt	•	12		1	Shutoff solenoid Volt	•	12
1000	•			+		•	
DELIVERY AND BREA	KAW	AY CHARACT	TERISTIC	+	Rated speed rpm	:	1200
Detect amond non-		2100	,	†	Aneroid pressure hPa		1000
Rated speed rpm Aneroid pressure	:	2100		I	Del. quantity	•	1000
hPa	:	1000		+	cm3/1000 strokes	:	56.0
Del. quantity		77.0		†	Tolerance		2 -
cm3/1000 strokes Tolerance	:	37.0		İ	cm3/1000 strokes Check tolerance	:	2.5
cm3/1000 strokes	:	3.0		1	cm3/1000s.	:	4.0
Check tolerance				+	Shutoff solenoid		
cm3/1000s. Shutoff solenoid	:	4.5	•	t	Volt	:	12
Volt	:	12		I	Rated speed rpm	:	1750
			•	╁	Aneroid pressure		
Rated speed rpm	:	2200	•	†	hPa	:	1000
Aneroid pressure hPa	•	1000	•	Ī	Del. quantity cm3/1000 strokes	:	58.0
Del. quantity	•	1000	-	-	Tolerance	•	
cm3/1000 strokes	:	18.0	-	t	cm3/1000 strokes	:	2.5
Check tolerance cm3/1000s.		6.0	•	İ	Check tolerance cm3/1000s.		3.5
Shutoff solenoid	•	0.0			Shutoff solenoid	•	3,5
Volt	:	12	-	ł	Volt	:	12
Ontrol annual man		2200	-	t	Dated aread are		700
Rated speed rpm Aneroid pressure	:	2280		Ī	Rated speed rpm Aneroid pressure	:	700
hPa	:	1000	-	}	hPa	:	1000
Del. quantity		4 5	-	+	Del. quantity		FO 0
cm3/1000 strokes Tolerance	:	1.5	- -	Ī	cm3/1000 strokes Tolerance	:	59.0
cm3/1000 strokes	:	1.5	•	+	cm3/1000 strokes	:	4.5
Check tolerance		4 ~	-	t	Check tolerance		
cm3/1000s.	:	1.5	-	t	cm3/1000s.	:	5.5

Character and analysis		ما ل ما الما الما الما الما الما الما ا		
Shutoff solenoid	: 12	+ Aneroid pr	essure	1000
Volt	: 12	+ hPa + Del. quant	; ;+\/	1000
Rated speed rpm	: 1400	- cm3/1000 s		-28.0
Aneroid pressure	. 1400	Tolerance	LIORES .	-20.0
hPa	: 1000	cm3/1000 s	trokes :	3.0
Del. quantity	. 1000	+ Check tole		3.0
cm3/1000 strokes	: 56.0	- cm3/1000s.		4.0
Tolerance	. ,,,,,	+ Shutoff so		4.0
cm3/1000 strokes	: 0.5	- Volt	tenora .	12
Check tolerance	. 0.5	T	•	12
cm3/1000s.	: 3.5	T TIMING-NEW	TOE TOAVE	DIFFERENCE
Shutoff solenoid	: 3.5	I THILING-DEV.	ICE INAVEL	DIFFERENCE
Volt	: 12	Rated speed	d rom :	1400
VOCE	. 16	Aneroid pro		1400
		hPa		1000
		Del. quant	itv.	1000
ELECTR. SHUTOFF		cm3/1000 s		-0.8
CONTROL LEVER, ID	I E STOD	Tolerance	LIONES .	0.0
CONTROL LEVER, 10	LL STOP	cm3/1000 s	trokes .	0.1
Rated speed rpm	: 325	Check tole		0.1
Del. quantity	. 565	cm3/1000s.		0.1
cm3/1000 strokes	: 1.5	Shutoff so		0.1
Tolerance	. 1.5	Volt	· ·	12
cm3/1000 strokes	: 1.5	I	•	12
Check tolerance	. 1.5	DELIVERY D	FEERENCE	
cm3/1000s.	: 1.5	T DEELIVERY D.	er r enemoe	
CIII 7 10000 .		Rated speed	d rom :	1400
FULL-LOAD STOP CO	NTROL LEVER	+ Aneroid pre		. 100
1022 20/10 010. 00	MINOC CETEN	+ hPa	:	1000
Rated speed rpm	: 325	+ Del. quant		.000
Del. quantity	. 025	+ cm3/1000 st		1.5
cm3/1000 strokes	: 1.5	+ Tolerance	., .,,,,,	
Tolerance		- cm3/1000 st	rokes :	1.5
cm3/1000 strokes	: 1.5	+ Check toler		
Check tolerance	•	+ cm3/1000s.	:	1.5
cm3/1000s.	: 1.5	+ Shutoff so	Lenoid	
		→ Volt	:	12
IDLE DELIVERY		+		
		+ TIMING-DEVI	CE TRAVEL	DIFFERENCE
Rated speed rpm	: 450	+		
Del. quantity	_	+ Rated speed		1400
cm3/1000 strokes	: 1.5	† Aneroid pre	ssure	
Tolerance		+ hPa	:	1000
cm3/1000 strokes	: 1.5	+ Tolerance m	m :	0.2
Check tolerance		+ Check		. .
cm3/1000S.	: 1.5	+ tolerance m		0.4
Shutoff solenoid	4.0	+ Shutoff sol	.eno1d	4.5
Volt	: 12	+ Volt	:	12
		†		
		+ START TRANS	TITON	
		Rated speed	d rpm :	500
CHECKING LOAD-DEP	ENDENT	+ Del. quanti		J U U
START OF DELIVERY		+ cm3/1000 st		22.0
STAKE OF DELIVERY		+ Tolerance	I UKES .	22.0
DELIVERY DIFFEREN	rE	- cm3/1000 st	rokes ·	8.0
DEFINER DILLEKEM	U E	+ Shutoff sol		0.0
Rated speed rpm	: 1400	+ Volt	.enoru	12
varen sheen thin	, 1400	7 1000	•	1 6

Rated speed rpm : 200

Del. quantity cm3/1000 strokes :

80.0

Tolerance

cm3/1000 strokes : 25.0

Shutoff solenoid

12 Volt

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3 Tolerance mm : +-0,1 Dimension KF mm : 8,4 : +-0,2 Tolerance mm MS1 dimension mm : 1,7

: +0,15/-0,1 : 7,0 Tolerance mm

KSB travel mm

CONTROL LEVER POSITION SET

Control lever

position YA mm : 37,9..39,9

Control lever

position YB mm : 43,7..48,9

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.11.93 Test oil : ISO 4113

Part no. : 0 460 426 209 Pump designation : VE6/12F1200R496

Customer—spec. information Customer : MAN

Motor : D 0826 LF 07 Power KW : 140.0

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 110

Opening pressure

bar : 250 Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 849

REMARKS

BEGINNING OF DELIVERY

Prestroke

Tolerance mm : +-0,02 Check tolerance mm : +-0,04

: 0,2

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850

Aneroid pressure

(as of UT) mm

hPa : 1000

Setting mm : 2.2 Tolerance mm : 0.2

SUPPLY PUMP PRESSURE

Rated speed rpm : 850

Aneroid pressure

hPa : 1000

Setting hPa : 7.6 Tolerance hPa : 0.3

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 92.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 4.5

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 60.0

Tolerance

cm3/1000 strokes : 0.5

Check tolerance

cm3/1000s. : 4.5

, 10003.

IDLE SETTING

Rated speed rpm : 250

Del. quantity

cm3/1000 strokes : 20.0

Tolerance

cm3/1000 strokes : 3.5

Spread

cm3/1000 strokes : 6.0

N15

Check tolerance cm3/1000s.	: 6.5	‡	Supply pomp pressure bar Tolerance hPa	:	5.8 0.3	
FULL-LOAD SPEED F	REGULATION	‡	OVERFLOW QUANTITY	•	0.0	
Rated speed rpm	: 1280	‡	Rated speed rpm	:	500	
Pressure hPa Del. quantity	: 1000	‡	Overflow quantity ccm/10s	:	63.8	
cm3/1000 strokes Tolerance		+	Tolerance ccm/10s	:	22.2	
cm3/1000 strokes		‡	Check tolerance		22.2	
STARTING FUEL DEL	TIVEKI	Ī	ccm/10s	:	22.2	
Rated speed rpm Del. quantity		‡	Rated speed rpm Aneroid pressure	:	1200	
cm3/1000 strokes Tolerance		‡	hPa Overflow quantity	:	1000	
cm3/1000 strokes	: 20.0	‡	ccm/10s Tolerance	:	97.2	
		‡	ccm/10s	:	41.6	
			Check tolerance ccm/10s	:	41.6	
INJECTION-PUMP TE	EST SPECIFICA	TIONS	DELIVERY AND BREAK	CAW!	AY CHARACTERISTI	C
TIMING DEVICE CHA	ARACTERISTIC	‡	Rated speed rpm	:	1280	Ĭ
Rated speed rpm Aneroid pressure	: 950	1	Aneroid pressure hPa	:	1000	
hPa	: 1000	‡	Del. quantity cm3/1000 strokes	:	65.0	
SV travel mm Tolerance mm	: 3.3 : 0.4	‡	Tolerance cm3/1000 strokes	:	3.0	
Check tolerance mm	: 0.7	‡	Check tolerance cm3/1000s.	:	4.5	
Rated speed rpm	: 750	‡	Rated speed rpm	:	1350	
Aneroid pressure hPa	: 1000	‡	Aneroid pressure hPa	:	1000	
SV travel mm Tolerance mm	: 1.0 : 0.4	Ŧ	Del. quantity cm3/1000 strokes Check tolerance	:	7.5	
Check tolerance mm		\pm	cm3/1000s.	:	7.5	
		Ţ	Rated speed rpm	:	1450	
SUPPLY PUMP PRESS		RISTIC	Aneroid pressure hPa	:	1000	
Rated speed rpm Aneroid pressure		7	Del. quantity cm3/1000 strokes	:	1.5	
hPa Supply pomp	: 1000	‡	Tolerance cm3/1000 strokes	:	1.5	
pressure bar Tolerance hPa		‡	Check tolerance cm3/1000s.	:	1.5	
Rated speed rpm	: 500	‡	Rated speed rpm	:	1300	
Aneroid pressure hPa	: 1000	‡	Aneroid pressure hPa	:	1000	

Del. quantity cm3/1000 strokes	: 4	48.0	‡	Del. quantity cm3/1000 strokes	:	92.0	
Tolerance cm3/1000 strokes	:	18.0	‡	Tolerance cm3/1000 strokes	:	0.5	
Check tolerance cm3/1000S.	:	18.0	‡	Check tolerance cm3/1000s.	:	2.5	
Rated speed rpm Aneroid pressure	: 50	00	Ī	MECHANICAL SHUTOF			
hPa Del. quantity	:	450	1	Rated speed rpm	:	1200	
cm3/1000 strokes Tolerance	;	93.0	+	Aneroid pressure	:	1000	
cm3/1000 strokes Check tolerance	:	0.5	+	Del. quantity cm3/1000 strokes	:	1.5	
cm3/1000s.	:	2.5	+	Tolerance cm3/1000 strokes	:	1.5	
Rated speed rpm Aneroid pressure	: 120		+	Spread cm3/1000 strokes	:	5.0	
hPa Del. quantity cm3/1000 strokes		1000 39.4	Ŧ	Check tolerance cm3/1000s. Spread	:	1.5	
Tolerance cm3/1000 strokes	:	2.5	Ī	cm3/1000 strokes	:	5.0	
Check tolerance cm3/1000s.	:	4.0	+				
Rated speed rpm	: 60	00	+	IDLE DELIVERY			
Aneroid pressure hPa	: 1	1000	‡	Rated speed rpm Del. quantity	:	400	
Del. quantity cm3/1000 strokes	: 10	01.0	‡	cm3/1000 strokes Tolerance		1.5	
Tolerance cm3/1000 strokes Check tolerance	:	2.5	+	cm3/1000 strokes Check tolerance cm3/1000s.	:	1.5 1.5	
cm3/1000s.	:	4.0	I	CIII37 10003.	•	1.3	
Rated speed rpm Aneroid pressure	: 80	00	‡				
hPa Del. quantity	: 1	000	‡				
cm3/1000 strokes Tolerance		24.6	‡	START TRANSITION			
cm3/1000 strokes Check tolerance		2.5	+	Rated speed rpm Del. quantity		430	
cm3/1000s. Rated speed rpm	: 50	4.0	Ŧ	cm3/1000 strokes Tolerance cm3/1000 strokes		55.0 15.0	
Aneroid pressure hPa		000	Ī	CIII37 1000 STI OKES	•	15.0	
Del. quantity cm3/1000 strokes		06.6	+	Rated speed rpm Del. quantity	:	330	
Tolerance cm3/1000 strokes		4.5	+	cm3/1000 strokes Tolerance		85.0	
Check tolerance cm3/1600s.	:	6.0	+	cm3/1000 strokes	:	15.0	
Rated speed rpm	: 100	0	+	ASSEMBLY AND ADJUS	STMEN	NT DIMENSIO	DNS
Aneroid pressure hPa	: 1	000	Ŧ	Dimension KF mm	: 6,	0	

Tolerance mm : +0,2
Dimension MS mm : 1,1
Tolerance mm : +0,2

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.06.95 Test oil : ISO 4113

Part no. : 0 460 426 244 Pump designation : VE6/12F1250R498-3

Customer—spec. information Customer : CDC

Motor : 6 BT 5.9B

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 109

Opening pressure

bar : 207 Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,2 Tolerance mm : +-0,02

Outlet : D

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 900
Aneroid pressure

hPa : 1000

Setting mm : 1.7
Tolerance mm : 0.2

Shutoff solenoid Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 900 Aneroid pressure

hPa : 1000

Setting hPa : 6.2 Tolerance hPa : 0.3

Shutoff solenoid

Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 850

Aneroid pressure hPa : 1000

Del. quantity cm3/1000 strokes : 85.0 Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0 Check tolerance

cm3/1000s. : 5.0

Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 61.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 5.0

Shutoff solenoid

Volt : 24

Check tolerance cm3/1000s.

: 6.0

Check tolerance cm3/1000s.

: 5.0

		+ Shutoff solenoid	
IDLE SETTING		Volt	: 24
Rated speed rpm Del. quantity	: 350	Rated speed rpm	: 450
cm3/1000 strokes	: 13.0	SV travel mm	: 2.5
Tolerance	. 13.3	+ Tolerance mm	: 0.5
cm3/1000 strokes	: 2.0	Check	
Shutoff solenoid		† tolerance mm	: 0.7
Volt	: 24	+ Shutoff solenoid	
Spread		† Volt	: 24
cm3/1000 strokes	: 5.5	1	2/
Check tolerance cm3/1000S.	: 7.0	+ KSB/AFB Volt	: 24
CIID7 10003.	: 7.0	Rated speed rpm	: 800
		+ Aneroid pressure	. 000
FULL-LOAD SPEED R	REGULATION	+ hPa	: 1000
		+	
Rated speed rpm	: 1350	∔ SV travel mm	: 1.3
Pressure hPa	: 1000	+ Tolerance mm	: 0.4
Del. quantity	-	+ Check	• -
cm3/1000 strokes	: 54.0	+ tolerance mm	: 0.7
Tolerance	3.0	+ Shutoff solenoid	. 2/
cm3/1000 strokes Shutoff solenoid	: 3.0	Volt	: 24
Volt	: 24	SUPPLY PLIMP PRESS	SURE CHARACTERISTIC
1011		1	TOTAL STRUCTURE
STARTING FUEL DEL	.IVERY	+ Rated speed rpm	: 1250
		+ Aneroid pressure	
Rated speed rpm	: 100	+ hPa	: 1000
Del. quantity		+ Supply pomp	
cm3/1000 strokes	: 80.0	+ pressure bar	: 7.5
Tolerance	: 20.0	+ Tolerance hPa + Shutoff solenoid	: 0.3
cm3/1000 strokes Shutoff solenoid	: 20.0	+ Volt	: 24
Volt	: 24	1 1011	• 67
1011	6 to 1	Rated speed rpm	: 800
		+ Aneroid pressure	
		+ hPa	: 1000
		+ Supply pomp	
		pressure bar	
INJECTION-PUMP TE	ST SPECIFICATIONS	+ Tolerance hPa + Shutoff solenoid	: 0.3
TIMING DEVICE CHA	PACTERISTIC	+ Volt	: 24
ITUTIAG DEATCE CUN	MAG 1 6 1 4 0 1 4 0	1	. 67
Rated speed rpm	: 1250	Rated speed rpm	: 500
Aneroid pressure		+ Aneroid pressure	
hPa	: 1000	† hPa	: 1000
		+ Supply pomp	
SV travel mm	: 2.6	pressure bar	: 4.2
Tolerance mm	: 0.4	† Tolerance hPa Shutoff solenoid	: 0.3
Check tolerance mm	: 0.7	+ Volt	: 24
Shutoff solenoid		1	
Volt	: 24	↓ OVERFLOW QUANTITY	
		+	
Rated speed rpm	: 500	Rated speed rpm	
Aneroid pressure	4000	+ Overflow quantity	
hPa	: 1000	+ ccm/10s	: 63.8
		Т	

Tolerance	22.2	+	Del. quantity		70.0	
ccm/10s	: 22.2		cm3/1000 strokes Tolerance	:	72.0	
Check tolerance ccm/10s	: 22.2		cm3/1000 strokes Check tolerance	:	0.5	
Shutoff solenoid		+	cm3/1000s.	:	4.0	
Volt	: 24		Shutoff solenoid Volt	:	24	
Rated speed rpm Ameroid pressure	: 1250	‡	Rated speed rpm	:	1250	
hPa	: 1000	+ .	Aneroid pressure hPa		1000	
Overflow quantity ccm/10s	: 97.2	+	Del. quantity	•		
Tolerance ccm/10s	: 41.6	+ .	cm3/1000 strokes Tolerance		82.0	
Check tolerance			cm3/1000 strokes Check tolerance	:	2.0	
ccm/10s Shutoff solenoid	: 41.6	+ ,	cm3/1000s. Shutoff solenoid	:	3.0	
Volt	: 24		Volt	:	24	
DELIVERY AND BREA	KAWAY CHARACTERISTIC		Rated speed rpm	:	1100	
Rated speed rpm	: 1350	+ 1	Aneroid pressure hPa	:	1000	
Aneroid pressure hPa	: 1000		Del. quantity cm3/1000 strokes	:	85.0	
Del. quantity cm3/1000 strokes		+ .	Tolerance cm3/1000 strokes		1.5	
Tolerance		+ (Check tolerance			
cm3/1000 strokes Check tolerance		+ :	cm3/1000S. Shutoff solenoid	•	3.5	
cm3/1000S. Shutoff solenoid	: 8.0	‡ '	Volt	:	24	
Volt	: 24		Rated speed rpm Aneroid pressure	:	850	
Rated speed rpm Aneroid pressure	: 1425	- + i	nPa	:	1000	
hPa	: 1000	+ (Del. quantity cm3/1000 strokes	:	85.0	
Del. quantity cm3/1000 strokes	: 25.0		Tolerance cm3/1000 strokes	:	0.5	
Check tolerance cm3/1000s.	: 15.0	+ (Check tolerance	•	3.0	
Shutoff solenoid Volt		+ 5	Shutoff solenoid Volt		24	
		Ŧ ,	70 11	•	24	
Rated speed rpm Aneroid pressure	: 1480	‡ 7	MECHANICAL SHUTOF	F		
hPa Del. quantity	: 1000	† F	Rated speed rpm	:	1250	
cm3/1000 strokes Tolerance	: 1.5	+ 4	Aneroid pressure nPa		1000	
cm3/1000 strokes	: 1.5	+ 0	Del. quantity	•		
Check tolerance cm3/1000S.	: 1.5	+ 7	cm3/1000 strokes Tolerance		1.5	
Shutoff solenoid Volt	: 24	+ (cm3/1000 strokes Check tolerance	:	1.5	
Rated speed rpm	: 650		cm3/1000s. Shutoff solenoid	:	1.5	
Aneroid pressure	: 450		/olt	:	24	
hPa	÷ 430	T				

ELECTR. SHUTOFF

CONTROL LEVER, IDLE STOP

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 strokes : 1.5

Check tolerance

cm3/1000s. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 1.5

IDLE DELIVERY

Rated speed rpm : 410

Del. quantity

cm3/1000 strokes : 1.5

Tolerance

cm3/1000 strokes : 1.5

Check tolerance

cm3/1000s. : 1.5

Shutoff solenoid

Volt : 24

START TRANSITION

Rated speed rpm : 210

Del. quantity

cm3/1000 strokes : 75.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

Volt : 24

Rated speed rpm : 130

Del. quantity

cm3/1000 strokes : 95.0

Tolerance

cm3/1000 strokes : 20.0

Shutoff solenoid

Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7

Tolerance mm : +-0,1

Dimension KF mm : 6,4

MS1 dimension mm : 1,36

: +-0,2

: +0,15/-0,1

Tolerance mm

Tolerance mm

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 34,8..38,8

Control Lever

position YB mm : 43,6..48,8

End of test-specification sheet

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Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.02.96 Test oil : ISO 4113

Part no. : 0 460 426 245 Pump designation : VE6/12F1250R498-4

Customer-spec. information Customer : CDC

Motor : 6 BT 5.9B

TEST BENCH REQUIREMENTS

Calibrating-oil

return

temperature °C : 45 Tolerance °C : 1

Overflow

restriction mm : 0.55

Inlet press. bar : 0.35 Tolerance bar : 0.05

Test nozzle holde

assembly : 1 688 901 109

Opening pressure

bar : 207 Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,4
Tolerance mm : +-0,02
Outlet : D

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 900 Aneroid pressure hPa : 1000

Setting mm : 1.4
Tolerance mm : 0.2
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 900 Aneroid pressure

hPa : 1000

Setting hPa : 6.2 Tolerance hPa : 0.3 Shutoff solenoid Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm 850 Aneroid pressure 1000 hPa : Del. quantity cm3/1000 strokes : 83.0 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 5.0 Shutoff solenoid Volt 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.5 Tolerance cm3/1000 strokes : 0.5 Spread cm3/1000 strokes 5.0 Shutoff solenoid 24 Volt Check tolerance 6.0 cm3/1000s. Check tolerance 5.0 cm3/1000s.

	1	Shutoff solenoid		
IDLE SETTING	<u> </u>	Volt	:	24
Rated speed rpm : 330 Del. quantity	1	Rated speed rpm	:	450
cm3/1000 strokes : 9.) \ \ \ \ \	SV travel mm	:	2.5
Tolerance	+	Tolerance mm	:	0.5
cm3/1000 strokes : 2.) +	Check		
Shutoff solenoid Volt : 2	, †	tolerance mm	:	0.7
Volt : 2 Spread	Ť	Shutoff solenoid Volt	:	24
cm3/1000 strokes : 5.	5 I	VOCE	•	24
Check tolerance	1	KSB/AFB Volt	:	24
cm3/1000s. : 7.) 			
	t	Rated speed rpm	:	800
FULL-LOAD SPEED REGULATION	†	Aneroid pressure hPa		1000
FOLE-LOAD SPEED REGULATION	I	rira	:	1000
Rated speed rpm : 1380	1	SV travel mm	:	1.0
Pressure hPa : 100) +	Tolerance mm	:	0.4
Del. quantity	+	Check		
cm3/1000 strokes : 63.) †	tolerance mm	:	0.7
Tolerance cm3/1000 strokes : 3.	, t	Shutoff solenoid Volt		24
Shutoff solenoid	' I	VOCE	:	24
Volt : 2	• 🖠	SUPPLY PUMP PRESSI	JRE CH	ARACTERISTIC
STARTING FUEL DELIVERY	Ŧ	Rated speed rpm Aneroid pressure	: 12	250
Rated speed rpm : 100	I	hPa	•	1000
Del. quantity	1	Supply pomp	•	1000
cm3/1000 strokes : 130.0) +	pressure bar	:	7.5
Tolerance	. +	Tolerance hPa	:	0.3
cm3/1000 strokes : 20.0		Shutoff solenoid	_	2/
Shutoff solenoid Volt : 24		Volt	•	24
. 2	Ī	Rated speed rpm	: 8	300
	+	Aneroid pressure		
	•	hPa	:	1000
		Subbly bowb		
INTECTION DUMP TEST SPECIEL		pressure bar Tolerance hPa	:	5.7 0.3
INJECTION-PUMP TEST SPECIFIC		Shutoff solenoid	•	0.5
TIMING DEVICE CHARACTERISTIC	,	Volt	:	24
	+			
Rated speed rpm : 1250		Rated speed rpm	: 5	500
Aneroid pressure		Aneroid pressure		1000
hPa : 1000		hPa Supply pomp	:	1000
SV travel mm : 2.8		pressure bar		4.2
Tolerance mm : 0.4		Tolerance hPa	:	0.3
Check	+	Shutoff solenoid		
tolerance mm : 0.7	+	Volt	:	24
Shutoff solenoid	†	OUEDELOIL OUANTYTY		
Volt : 24	†	OVERFLOW QUANTITY		
Rated speed rpm : 500	Ī	Rated speed rpm		500
Aneroid pressure	Ţ	Overflow quantity		-00
hPa : 1000	+	ccm/10s	:	72.2
	1			

Tolerance ccm/10s	:	22.2	‡	Aneroid pressure hPa	:	450
Check tolerance ccm/10s Shutoff solenoid	:	22.2	 	LDA/ HBA stroke mm Del. quantity	:	7.0
Volt	:	24	+	cm3/1000 strokes Tolerance	:	84.0
Rated speed rpm Aneroid pressure	:	1250	Ī	cm3/1000 strokes Check tolerance	:	0.5
hPa Overflow quantity	:	1000	+	cm3/1000S. Shutoff solenoid	:	4.0
ccm/10s	:	88.8	Ŧ	Volt	:	24
Tolerance ccm/10s	:	27.7	Ī	Rated speed rpm Aneroid pressure	:	1250
Check tolerance		27 7	+	hPa	:	1000
ccm/10s Shutoff solenoid	:	27.7	Ţ	Del. quantity cm3/1000 strokes	:	86.0
Volt	:	24	‡	Tolerance cm3/1000 strokes	:	2.5
DELIVERY AND BREA	KAWA	AY CHARACTERISTIC	Ì	Check tolerance cm3/1000s.		3.0
Rated speed rpm	:	1380	+	Shutoff solenoid		
Aneroid pressure hPa	:	1000	Ţ	Volt	:	24
Del. quantity cm3/1000 strokes	:	63.0	‡	Rated speed rpm Aneroid pressure	:	900
Tolerance cm3/1000 strokes		3.0	<u>†</u>	hPa Del. quantity	:	1000
Check tolerance	•		Ŧ	cm3/1000 strokes	:	83.5
cm3/1000S. Shutoff solenoid	:	8.0	‡	Tolerance cm3/1000 strokes	:	2.5
Volt	:	24	‡	Shutoff solenoid Volt	:	24
Rated speed rpm	:	1430	+			1100
Aneroid pressure hPa	:	1000	Ŧ	Rated speed rpm Aneroid pressure	:	
Del. quantity cm3/1000 strokes	:	30.0	‡	hPa Del. quantity	:	1000
Check tolerance cm3/1000s.		15.0	<u>†</u>	cm3/1000 strokes Tolerance	:	85.5
Shutoff solenoid	•		Ŧ	cm3/1000 strokes	:	2.5
Volt	:	24	‡	Check tolerance cm3/1000s.	:	3.5
Rated speed rpm Aneroid pressure	:	1490	‡	Shutoff solenoid Volt	:	24
hPa	:	1000	1	Rated speed rpm	:	850
Del. quantity cm3/1000 strokes	:	1.5	Ŧ	Aneroid pressure	•	
Tolerance cm3/1000 strokes	:	1.5	‡	hPa Del. quantity	:	1000
Check tolerance cm3/1000S.	:	1.5	†	cm3/1000 strokes Tolerance	:	83.0
Shutoff solenoid		24	+	cm3/1000 strokes	:	0.5
Volt	:		Ŧ	Check tolerance cm3/1000s.	:	3.0
Rated speed rpm	:	600	‡	Shutoff solenoid Volt	:	24
			+			

		†
MECHANICAL SHUTO	FF	†
Rated speed rpm Aneroid pressure	: 1250	T START TRANSITION
hPa Del. quantity	: 1000	+ Rated speed rpm : 240
cm3/1000 strokes Tolerance	: 1.5	<pre>Del. quantity cm3/1000 strokes : 78.0</pre>
cm3/1000 strokes Spread	: 1.5	Tolerance cm3/1000 strokes : 10.0
m3/1000 strokes	: 5.0	+ Shutoff solenoid
heck tolerance m3/1000s.	: 1.5	+ Volt : 24
pread m3/1000 strokes	: 5.0	Rated speed rpm : 130
Shutoff solenoid Volt	: 24	+ Del. quantity + cm3/1000 strokes : 130.0
		+ Tolerance + cm3/1000 strokes : 20.0
ELECTR. SHUTOFF CONTROL LEVER, IC	DLE STOP	+ Shutoff solenoid + Volt : 24
Rated speed rpm Del. quantity	: 350	ASSEMBLY AND ADJUSTMENT DIMENSIONS
m3/1000 strokes	: 1.5	ASSEMBLY AND ADSOSTMENT DIMENSIONS
olerance m3/1000 strokes	: 1.5	LDA/
heck tolerance m3/1000s.	: 1.5	+ HBA stroke mm : 7.0 + Dimension K mm : 3,7
pread m3/1000 strokes	: 5.0	+ Tolerance mm : +-0,1 + Dimension KF mm : 6,4
ULL-LOAD STOP CO	NTROL LEVER	Tolerance mm : +-0,2 MS1 dimension mm : 1,1 Tolerance mm : +0,15/-0,1
Rated speed rpm	: 350	10cerance min . +0,137-0,1
el. quantity m3/1000 strokes	: 1.5	
olerance m3/1000 strokes pread	: 1.5	+ CONTROL LEVER POSITION + SET
m3/1000 strokes	: 5.0	Control lever
heck tolerance m3/1000s.	: 1.5	position YA mm : 34,838,8
pread m3/1000 strokes	: 5.0	Control lever
DLE DELIVERY		+ position YB mm : 45,350,5
ated speed rpm el. quantity	: 390	1
m3/1000 strokes	: 1.5	End of test-specification sheet
olerance m3/1000 strokes	: 1.5	
heck tolerance m3/1000s.	: 1.5	‡
hutoff solenoid olt	: 24	‡
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